CDP-XA5ES

SERVICE MANUAL

AEP Model

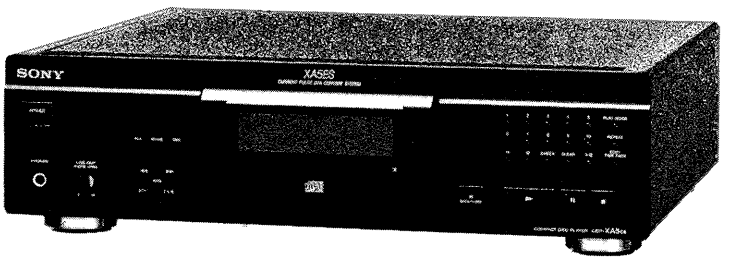


Photo : Black

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM32MB-12M (BLACK) CDM32MN-12M (GOLD)
Base Unit Type	BU-12M
Optical Pick-up Type	KSS-273A

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz ± 0.3 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0017%

Outputs

	Jack type	Maximum output level	Load impedance
LINE OUT (FIXED)	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
LINE OUT (VARIABLE)	Phono jacks	2 V (at 50 kilohms)	Over 50 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	–18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Coaxial output connector	0.5Vp-p (75 ohms)	75 ohms
PHONES	Stereo phone jack	28 mW	32 ohms

General

Power requirements	220 V – 230 V AC, 50/60 Hz
Power consumption	20 W
Dimensions (approx.) (w/h/d)	430 × 125 × 370 mm (17 × 5 × 14 5/8 in.) incl. projecting parts
Mass (approx.)	13.5 kg (29 lbs 12 oz)

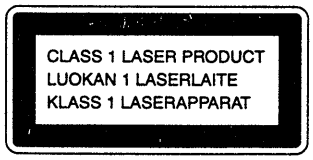
Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)
Stabilizer (1)

Design and specifications are subject to change without notice.

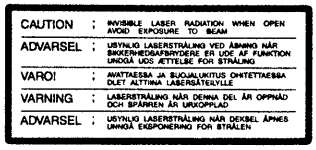
COMPACT DISC PLAYER

SONY®



This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.

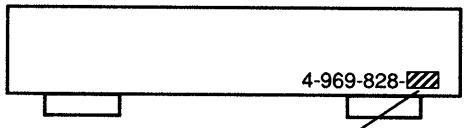

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE
VARNING : LASERSTRÅLNING NÄR DENNA DEL ÄR OPPNAD OCH SPÄRREN ÄR URKOPPLAD
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

MODEL IDENTIFICATION

— BACK PANEL —



AEP Model : 1□ (CED)
German Model : 2□ (CEE)

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SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

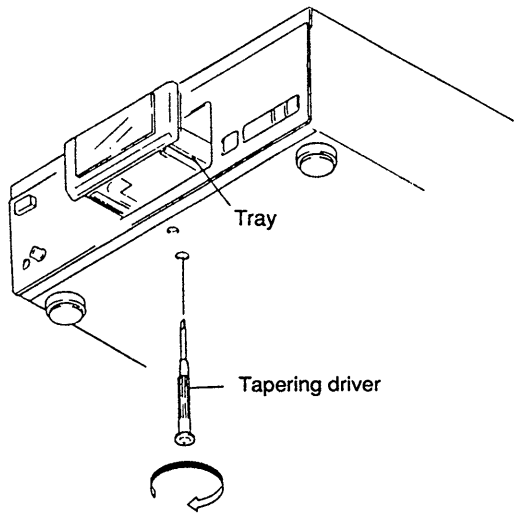
Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SECTION 1
SERVICING NOTE

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow (to OUT direction).



* To close the disc tray, turn the driver in the reverse direction (to IN direction).

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repain parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

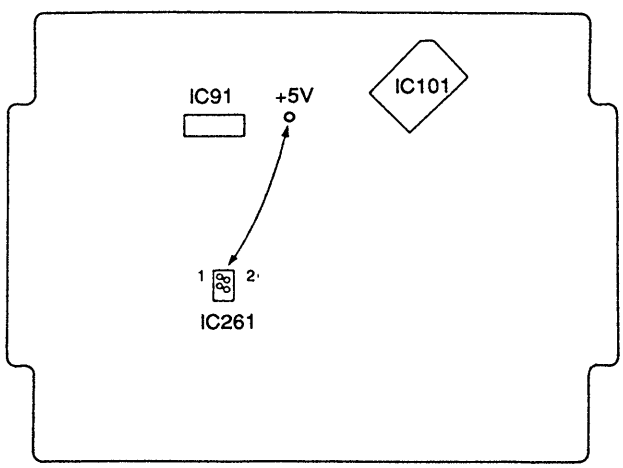
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output three times.

PREPARATION FOR ADJUSTMENT AND MESUREMENT

Perform connecting the IC261 ② pin of SERVO board to the line of +5V because this unit does not work without the stabilizer structurally.

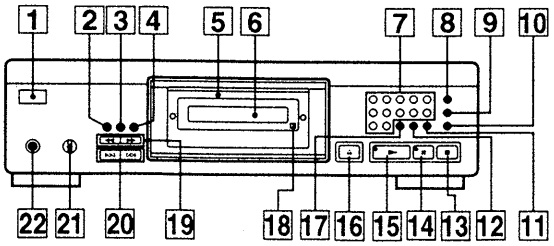
SERVO BOARD — Conductor side —



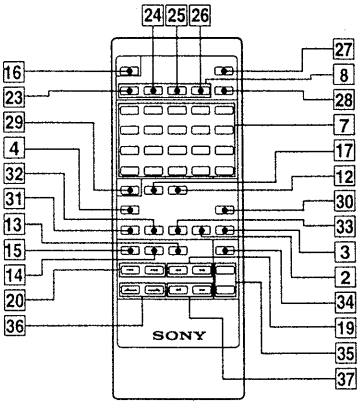
SECTION 2
GENERAL

Identifying the Parts

Front Panel



Remote Commander (RM-D921)

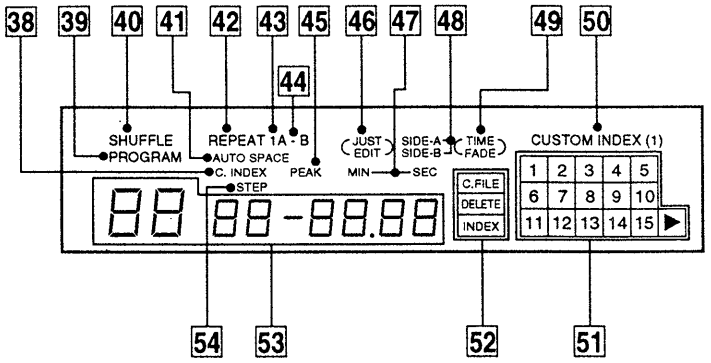


1 Power switch
2 FILE button
3 ERASE button
4 TIME button
5 Disc tray
6 Display window
7 Numeric buttons
8 PLAY MODE button
9 REPEAT button
10 EDIT/TIME FADE button
11 >12 (over 12) button
12 CLEAR button
13 ■ (stop) button
14 II (pause) button
15 ► (play) button
16 ▲ OPEN/CLOSE button
17 CHECK button
18 Remote sensor
19 ◄◄/►► (manual search) buttons
20 ⏮/⏭ AMS* buttons

21 LINE OUT/PHONE LEVEL control
22 PHONES jack
23 CONTINUE button
24 SHUFFLE button
25 PROGRAM button
26 C. INDEX button
27 DISPLAY MODE button
28 MUSIC SCAN button
29 >20 (over 20) button
30 PEAK SEARCH button
31 REPEAT (repeat/A-B repeat clear) button
32 A ↔ B repeat button
33 AUTO SPACE button
34 FADER (fade in/fade out) button
35 LINE OUT LEVEL (line out/headphones level) buttons
36 ← → INDEX buttons
37 ◄◄ ►► SLOW (low speed manual search) buttons

* AMS is the abbreviation of Automatic Music Sensor.

Display Window

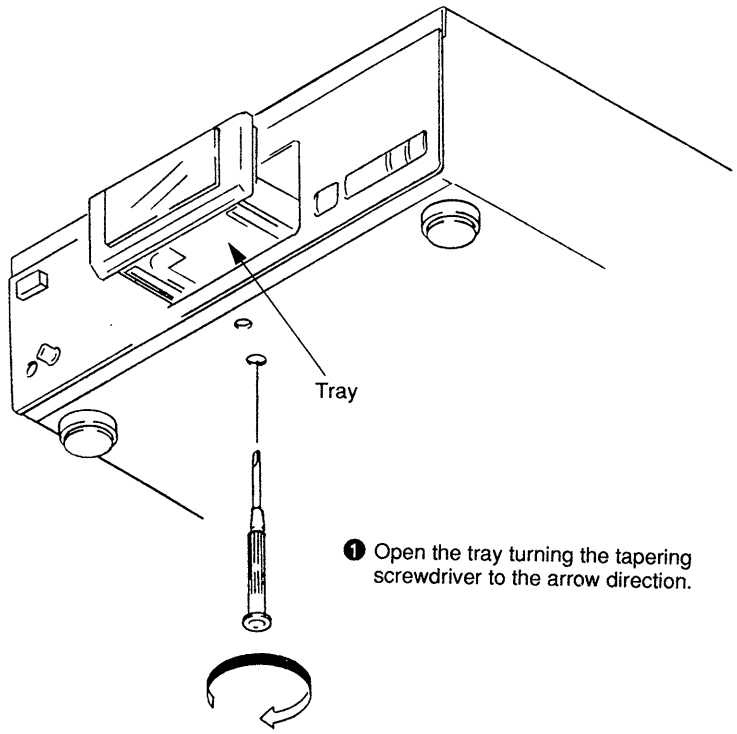


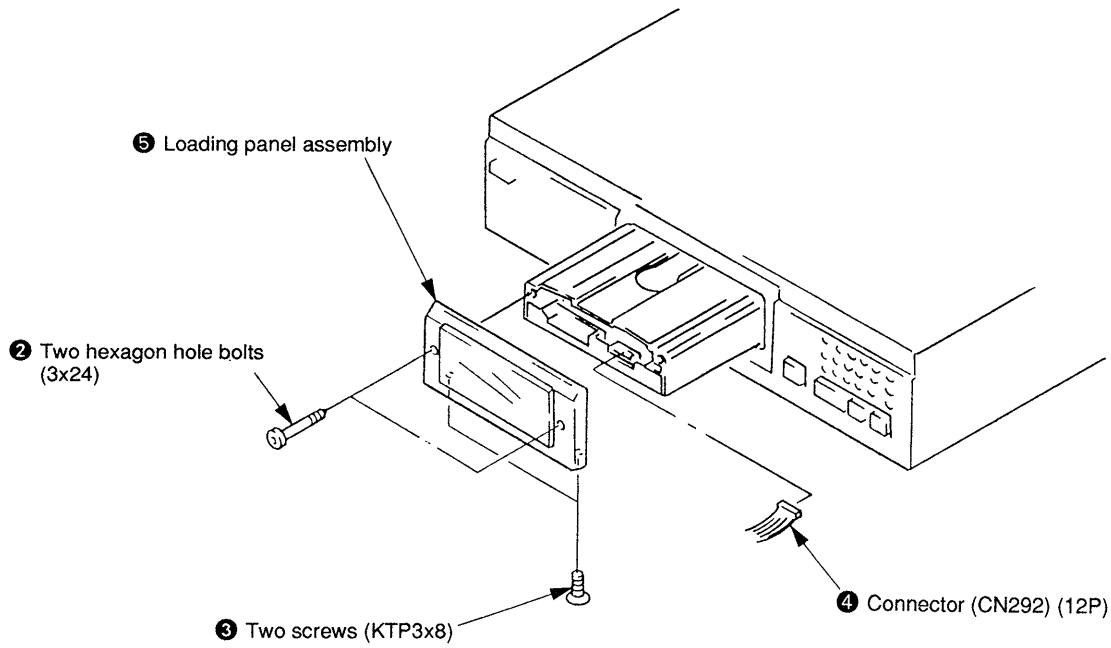
38 C. INDEX
39 PROGRAM
40 SHUFFLE
41 AUTO SPACE
42 REPEAT
43 REPEAT 1
44 REPEAT A-B
45 PEAK
46 JUST EDIT
47 MIN/SEC
48 SIDE A/SIDE B
49 TIME FADE
50 CUSTOM INDEX (1)
51 1 — 15 ►
52 C FILE/DELETE/INDEX
53 DISPLAY
54 STEP

SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

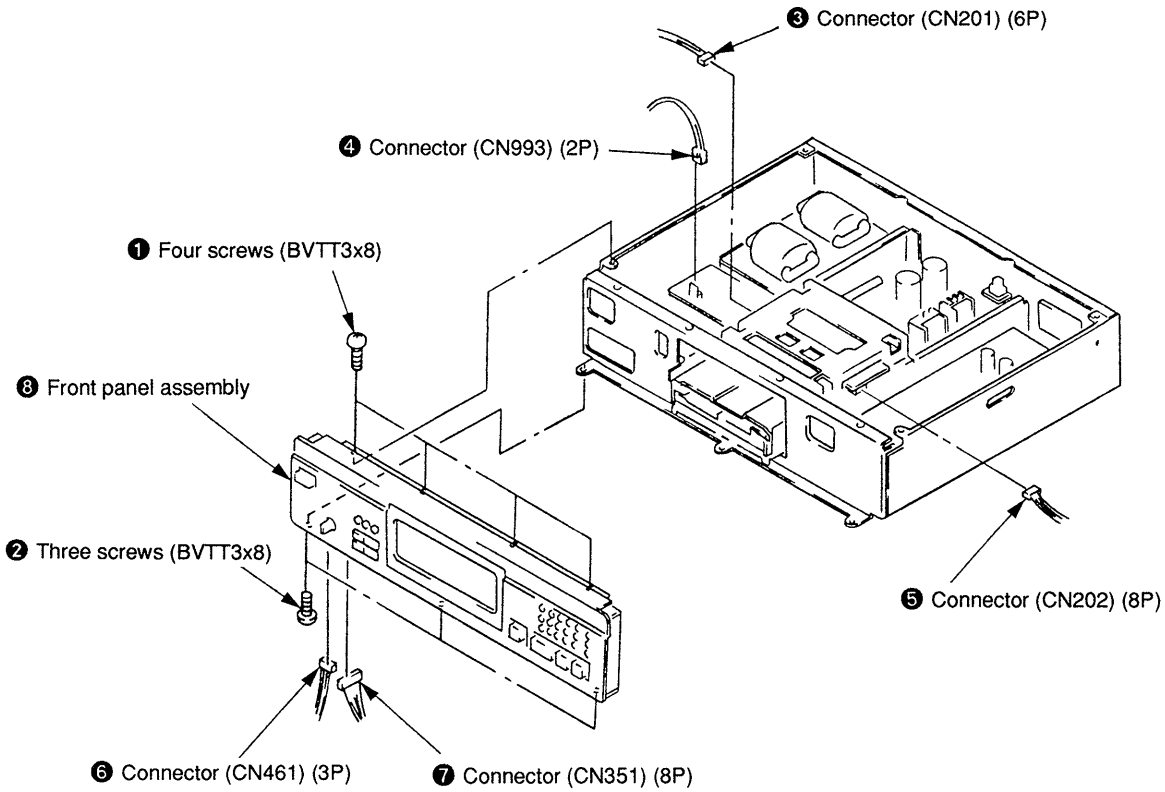
3-1. LOADING PANEL



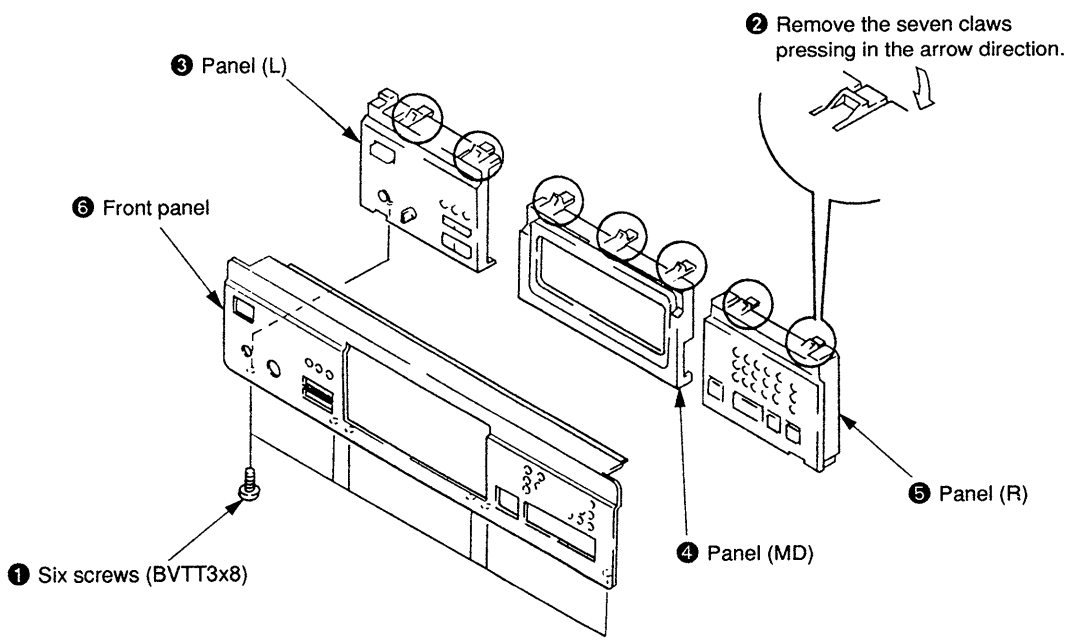


Note : Install in order ❸ right ➡ ❸ left ➡ two of ❷.

3-2. FRONT PANEL ASSEMBLY


❸ Connector (CN201) (6P)
❹ Connector (CN993) (2P)
❶ Four screws (BVTT3x8)
❽ Front panel assembly
❷ Three screws (BVTT3x8)
❺ Connector (CN202) (8P)
❻ Connector (CN461) (3P)
❼ Connector (CN351) (8P)

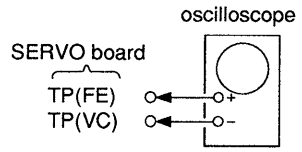
3-3. PANEL (L), (R), (MD)



SECTION 4
ELECTRICAL BLOCK ADJUSTMENTS

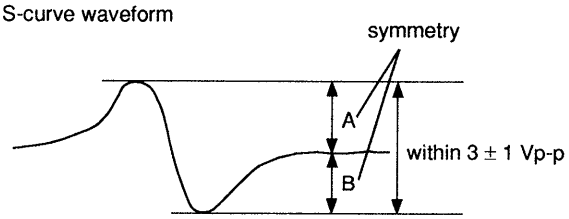
Note :
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :
1. Connect oscilloscope to test point TP (FE).
2. Connect between test point TP (FEI : IC101 ㉙ pin) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1 Vp-p.

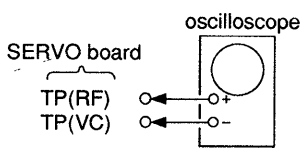
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

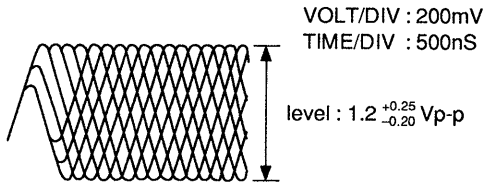


Procedure :
1. Connect oscilloscope to test point TP (RF).
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

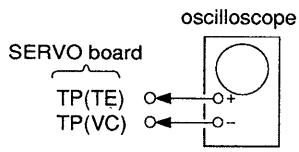
Note :

Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform

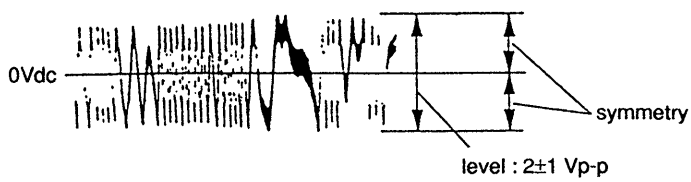


E-F Balance (Traverse) Check



Procedure :
1. Connect test point TP (ADJ) to ground and TP(TEI : IC101 ㉗ pin) to TP (VC) with a lead wire.
2. Connect oscilloscope to test point TP (TE).
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V dc, and check this level.

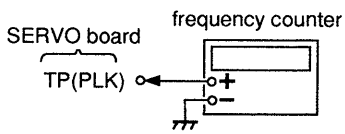
Traverse waveform



6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

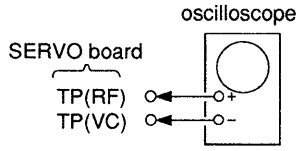
Procedure :
1. Connect frequency counter to test point (PLK) with lead wire.



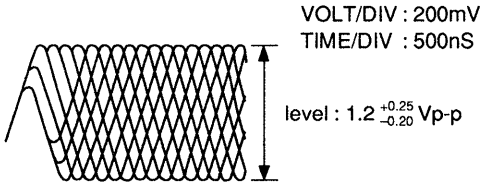
2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

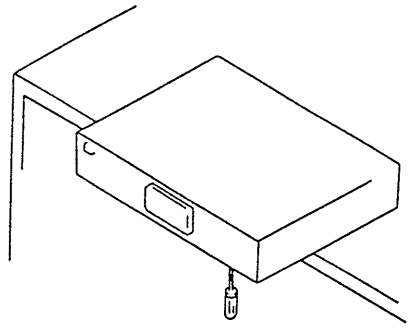
Skew Adjustment

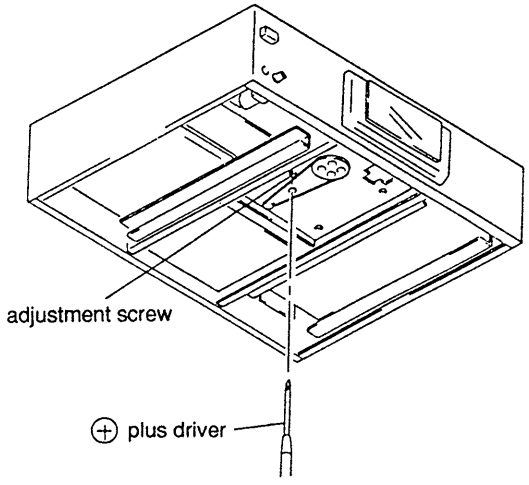
Do not perform the skew adjustment when not using attached stabilizer to a set.



RF signal waveform







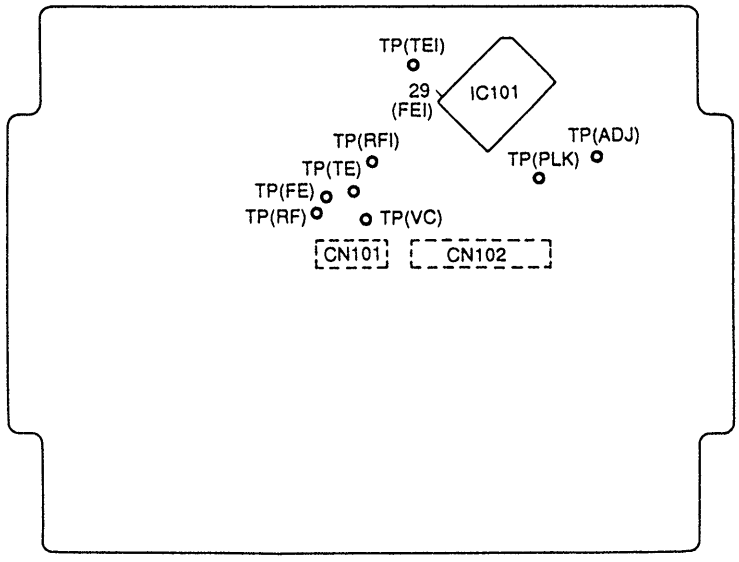
1. Remove the bottom board, put one third of the unit out from the desk.
2. Connect oscilloscope to test point TP (RF).
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Adjust to be clear the waveform of the oscilloscope turning the adjustment screw with a ⊕ screwdriver.

Note :

A clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

6. After the adjustment, lock the adjustment screw.

[SERVO BOARD] — Conductor side —



SECTION 5
DIAGRAMS

5-1. IC PIN FUNCTIONS

- **IC201 System Control (CXP84124-025Q)**

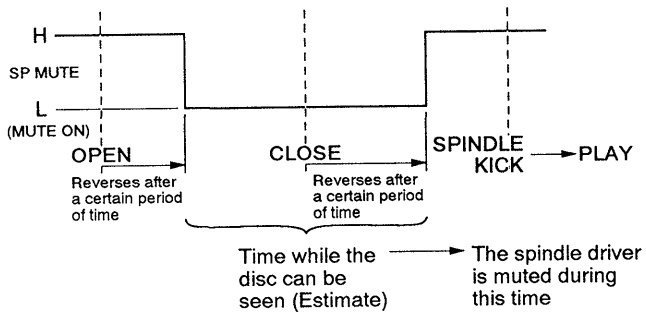
Pin No.	Pin Name	I/O	Function
1	A3	O	Output of address to S.RAM (LH5160TG)
2	A4	O	
3	A5	O	
4	A6	O	
5	A7	O	
6	A8	O	
7	A9	O	
8	A10	O	
9	A11	O	
10	A12	O	
11	WE	O	Output of write enable to S.RAM
12	——	O	Not used (open)
13	——	O	
14	LED-PLAY	O	PLAY Lamp output "H": ON
15	LED-PAUSE	O	PAUSE Lamp output "H": ON
16	LED-D/O ON	O	DIGITAL OUT Lamp output
17	SPDL-MUTE	O	Drive IC MUTE output for spindle. "L": ON
18	SHIFT-ON/OFF	I	D/F mode control input
19	VOL UP	O	Headphone motor volume up output
20	VOL DOWN	O	Headphone motor volume down output
21	BLK	O	Blank output to fluorescent indicator tube driver. (LC7570E). When the indicator tube lights: "H"
22	D0	O	Serial data output to fluorescent indicator tube driver. (LC7570E).
23	D1	O	
24	D2	O	
25	CLK	O	Clock output to fluorescent indicator tube driver. (LC7570E).
26	WR	O	Latch output to fluorescent indicator tube driver. (LC7570E).
27	SENSER SW	O	Senser power supply ON/OFF control output for stabilizer detection
28	SENSER	I	Stabilizer detection input
29	LIMIT OUT	I	Sled out switch input "L": SW ON
30	RESET	I	Microcomputer reset input
31	XTAL I	I	Oscillator connector pin (10 MHz)
32	XTAL O	O	
33	Vss	–	Connected to GND
34	——	–	Not used (open)
35	——	–	
36	AVss	–	A/D converter GND
37	AVREF	–	A/D converter reference voltage input (Connected to +5V)
38	K0	I	Key data input (A/D input). When the key is not pressed: "H"
39	K1	I	
40	K2	I	

Pin No.	Pin Name	I/O	Function
41	K3	I	Key data input (A/D input). When the key is not pressed: "H"
42	K4	I	
43	K5	I	Model distinction
44	ADJ/AFJ	I	Test mode input. The equipment is fixed at "H"
45	IN/OUT SW	I	Loading IN/OUT switch input
46	SCLK	O	Serial read out data read out clock output to CXD2515Q
47	PRGL	O	Program latch to digital filter
48	CLK	O	Serial data transfer clock output to CXD2515Q, CXD8504M
49	SENSE	I	SENSE signal input from CXD2515Q
50	DATA	O	Serial data output to CXD2515Q, CXD8504M
51	SQCK	O	Sub code Q read out clock output to CXD2515Q
52	SUBQ	I	Sub code Q data input from CXD2515Q
53	TEST	O	Not used (open)
54	SEL 1	I	Model distinction
55	SEL 0	I	
56	RMIN	I	Remote control signal input
57	TIMER	I	Not used
58	TEST	O	Not used (open)
59	TEST	O	
60	SCOR	I	Sub code sync input from CXD2515Q. Start to read out the sub code receiving this signal
61	AMUTE	O	Analog mute output. "H": mute on
62	LDON	O	Laser diode ON/OFF control output "H": ON
63	XLT	O	Serial data latch output to CXD2515Q
64	LOAD OUT	O	Output to rotate loading motor in the loading out direction. "H": OUT
65	LOAD IN	O	Output to rotate loading motor in the loading in direction. "H": IN
66	DOUT	O	Digital output ON/OFF control output
67	DMUTE	O	Muting control output
68	D0	I/O	Input and output of data signal with S.RAM (LH5160TG)
69	D1	I/O	
70	D2	I/O	
71	D3	I/O	
72	V_{DD}	I	Power supply terminal (+5V)
73	NC	–	Connected to +5V
74	D4	I/O	Input and output of data signal with S.RAM (LH5160TG)
75	D5	I/O	
76	D6	I/O	
77	D7	I/O	
78	A0	O	Address signal output to S.RAM (LH5160TG)
79	A1	O	
80	A2	O	

• Main Ports

⑰ SPINDLE MUTE

From the viewpoint of performance of the set, the disc must not move nor sway when the disc table opens. These problems however occur in the actual case due to the offset voltage generated and the voltage generated because of the positional relation between the BSL coil and Hall element.
The BSL (IC104, IC105) driver is therefore muted while the tray is open. Pin ⑰ provides the timing for this.

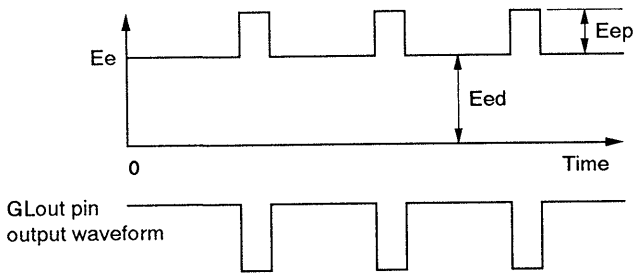


㉑ BLANK

This port is required because the display tube in this set static-lights up and a dedicated screwdriver is required.
It is basically a RESET pin. But as problems will occur if used also as RESET, timings are specially provided using the microprocessor.

㉗ SENSER SW

As IC261 IS471F operate in pulse as shown in the figure, the sound quality may be affected if operated constantly.
As the purpose of IC261 is to detect if the presence of the stabilizer, it should be operated only when the tray is drawn in. IC261 operates as it is H only at this time. Normally it is L.

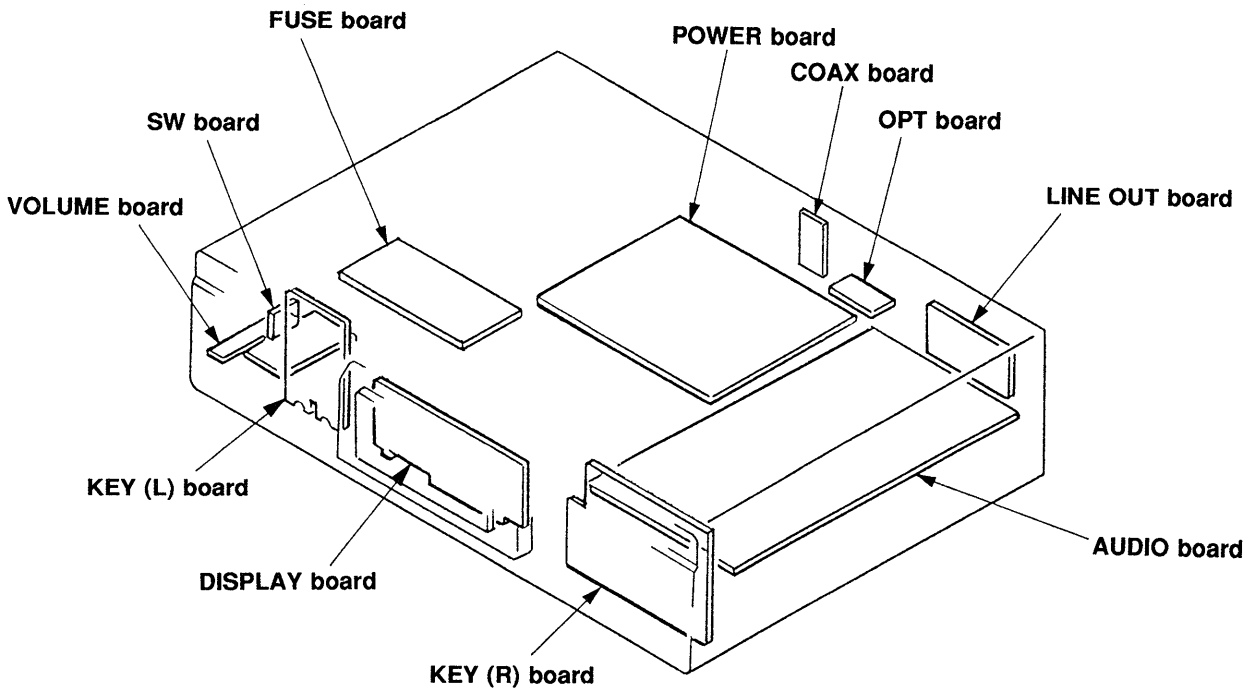


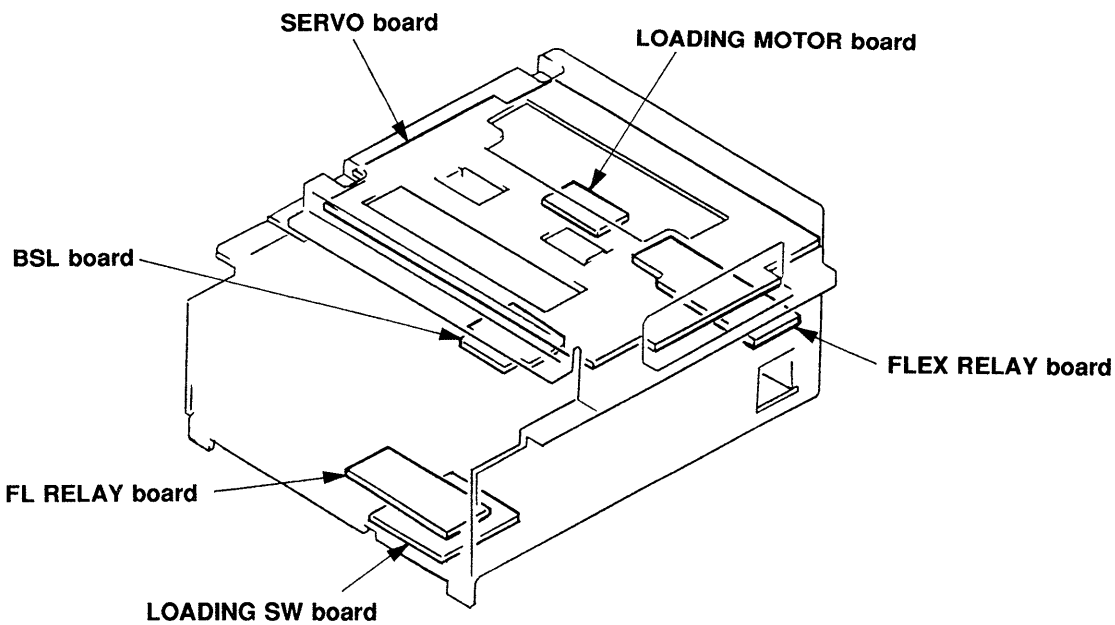
* Eep is the luminance of the signal light tuned with the low level timing of the GLout pin output.
Eed is the luminance of the d.c. light. The light source is the infrated-emitting diode (λ p=940 nm).

㉘ SENSER

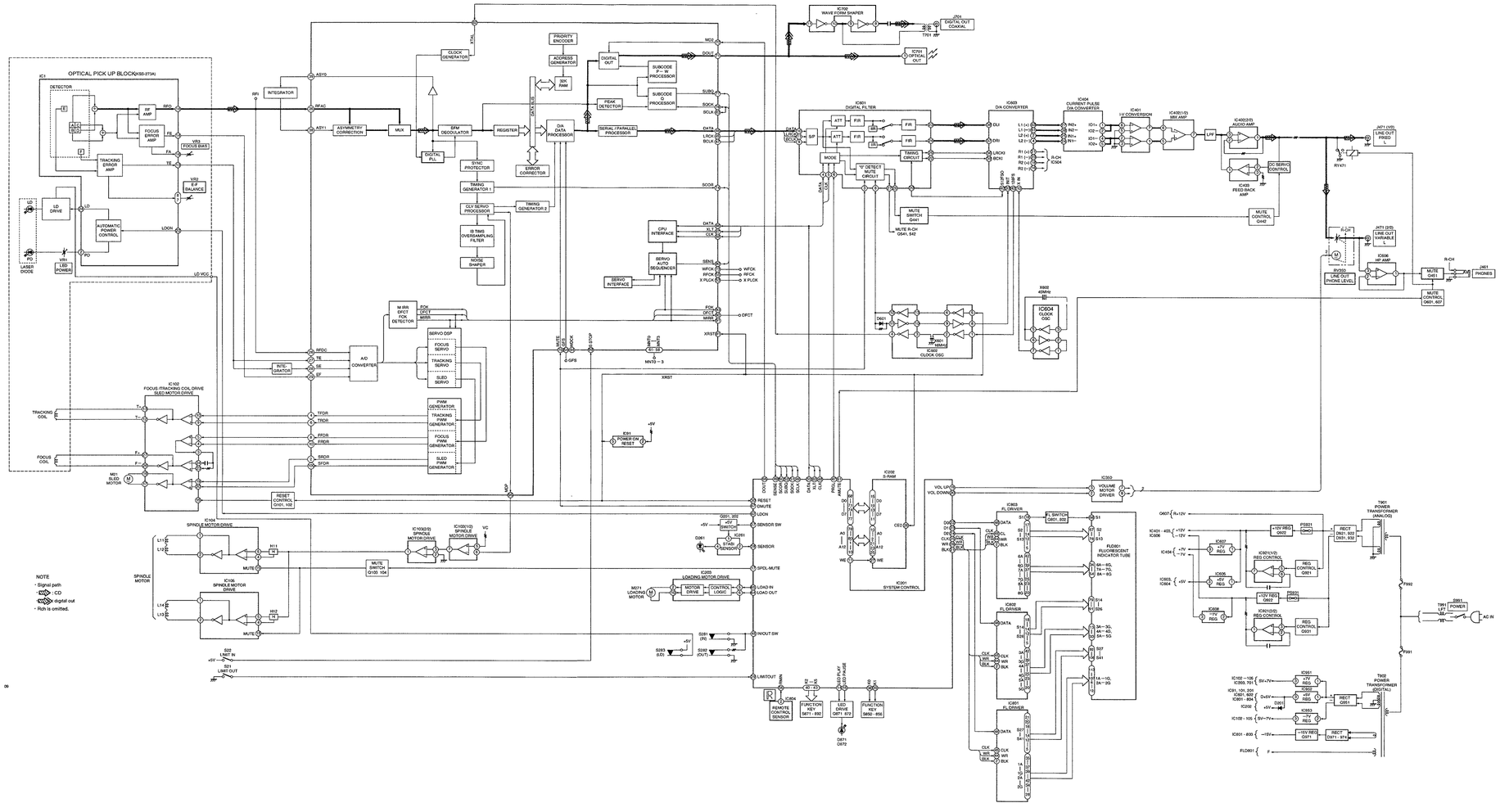
The results of the detection of IC261 IS471F is output to this pin. It becomes L when there is no stabilizer (when light reaches). The next process of imposing the next focus is not performed. (Effective only when ㉗ is H.)
Therefore, it must be noted that if PLAY is performed when the servo mount at the top of the CDM is not assembled properly, the detection circuit operates and this pin does not operate.
It is does not operate, refer to 1. Service Note "Preparations for Adjustment and Measurement" on page 3.

5-2. CIRCUIT BOARDS LOCATION





5-3. BLOCK DIAGRAM



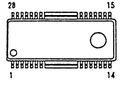
5-4. SEMICONDUCTOR LEAD LAYOUTS

AD712JN
M5220P
M5238P
OP-27GP
RC4556D

(TOP VIEW)

BA6208

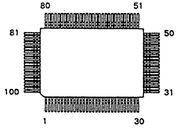
BA6297AFP



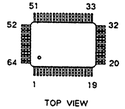
CXA8042S

(Top view)

CXD2515Q



CXD2562Q

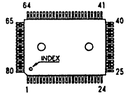


TOP VIEW

CXD8504M
LH5160TG

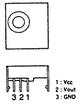
(TOP VIEW)

CXP84124-025Q

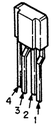


GP1F32T

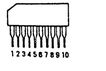
GP1U90XB



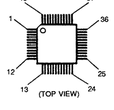
IS471F



LB1641

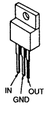


LC7570E

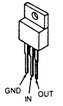


(TOP VIEW)

M5F7807L
TA7805S



M5F7907L



M51957AL

SN74HCU04AN

(TOP VIEW)

TC7WU04F
μPC4558G2

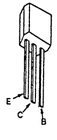
(TOP VIEW)

TC74HCU04AF

(TOP VIEW)

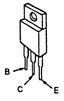
DTA114EK
DTA144EK
DTC114EK
DTC144EK
2SC3395

DTA144ES
DTC114ES



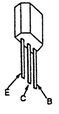
DTC114EF

2SA985A-QP
2SC2275A-P



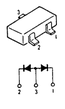
2SB734-34

2SC2878-AB



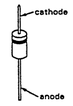
2SK246-BL
2SK30A-GR3

DAP202K

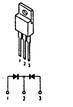


DTZ4.7C

ERB83-004
10E2
1N4148M

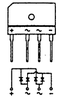


F10P10Q

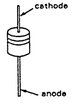


GL480

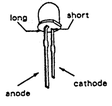
RBA-402L



RD3.9ES-T2B1
RD6.8JS-T2B1
RD7.5JS-B2
RD10JS-T2B1
RD18ES-T2B1
11EQS04



SEL2510C-D
SEL2810A-C

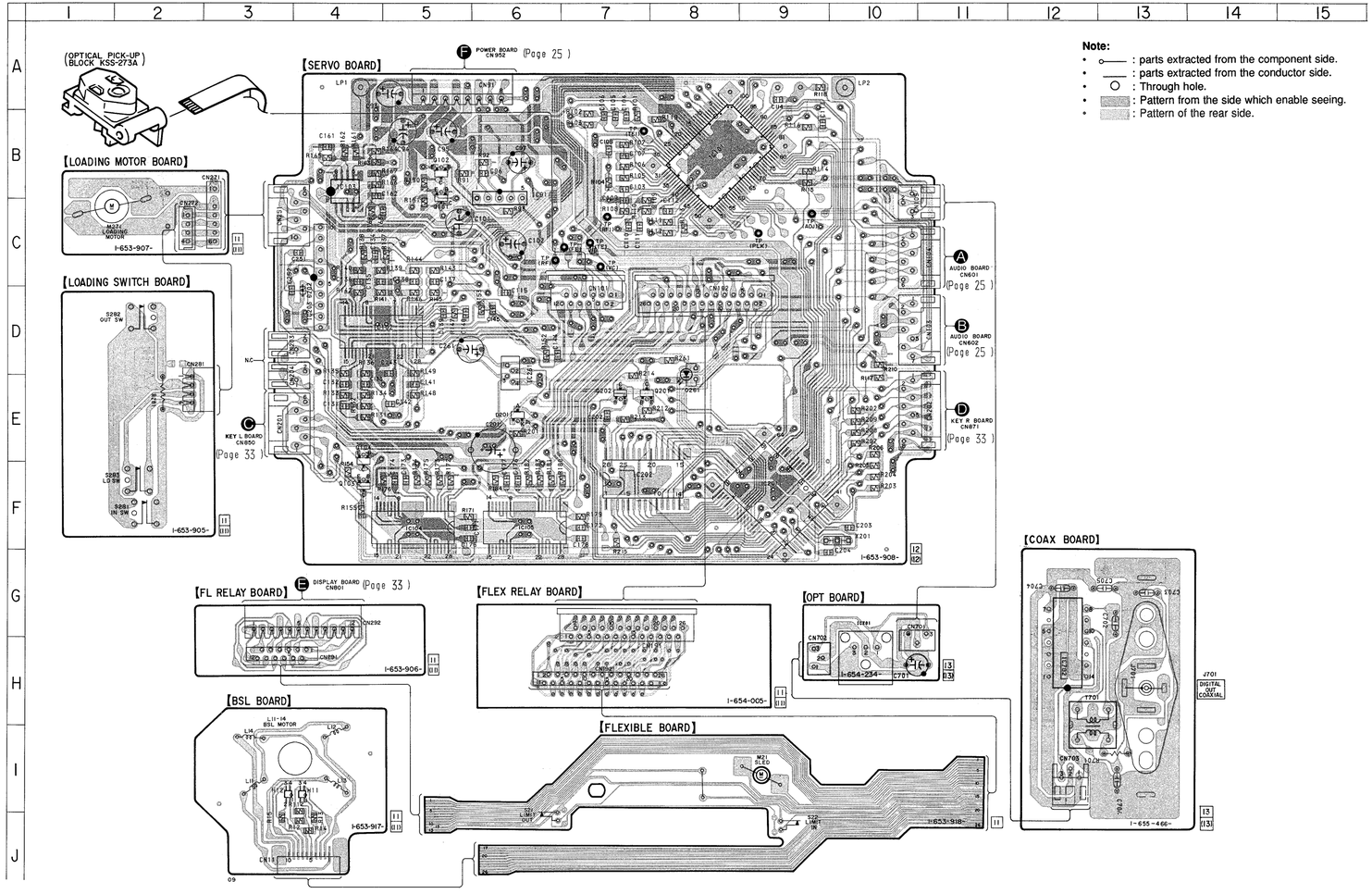


5-5. PRINTED WIRING BOARD — SERVO SECTION —

• See page 12 for Circuit Boards Location.

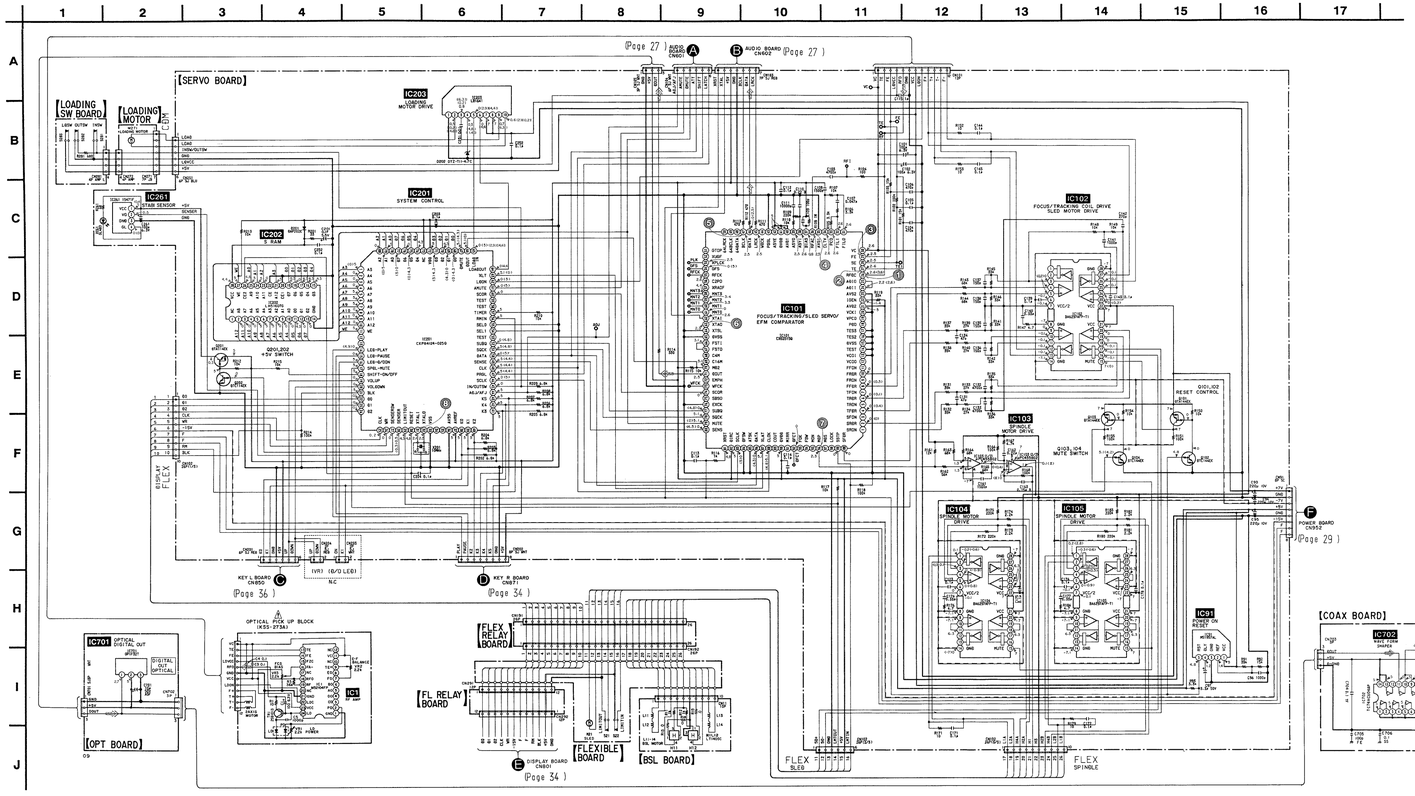
• **Semiconductor Location**

Ref. No.	Location
D201	E-6
D202	D-4
D261	E-8
H11	I-4
H12	I-3
IC91	B-6
IC101	B-8
IC102	D-4
IC103	B-4
IC104	F-5
IC105	F-6
IC201	F-9
IC202	F-7
IC203	C-4
IC261	D-6
IC701	H-10
IC702	H-12
Q101	C-5
Q102	B-5
Q103	F-4
Q104	E-4
Q201	E-7
Q202	E-7



5-6. SCHEMATIC DIAGRAM — SERVO SECTION —

• See page 9 for IC Pin Functions. (IC201)



Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

- ▬▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- Voltage and waveforms are dc with respect to ground under conditions.
  no mark : STOP
  < > : PLAY
  ( ) : LOAD OUT
  (( )) : LOAD IN
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▭▷ : CD
  ▭▷▷ : digital out

• Waveforms

① IC101 (26) — 1.2Vp-p

② IC101 (27) — APPROX 400mVp-p — 2.5V

③ IC101 (29) — APPROX 200mVp-p — 2.5V

④ IC101 (36) — 1.2Vp-p

⑤ IC101 (47) — 5Vp-p — 470nsec

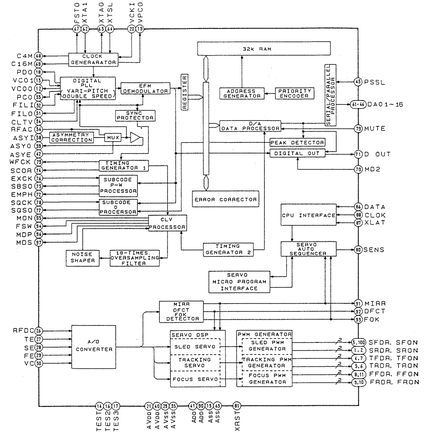
⑥ IC101 (63) — 4.8Vp-p — 16MHz

⑦ IC101 (96) — 2.6Vp-p — 7.5 µsec

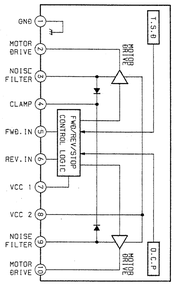
⑧ IC201 (31) — 4.6Vp-p — 10MHz

• IC Block Diagrams

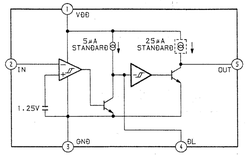
IC101 CXD2515Q



IC203 LB1641

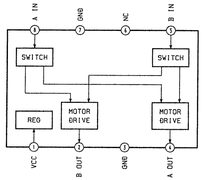


IC91 M51957AL

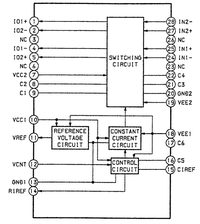


• IC Block Diagrams

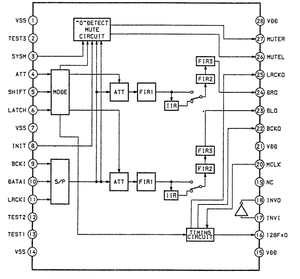
IC350 BA6208



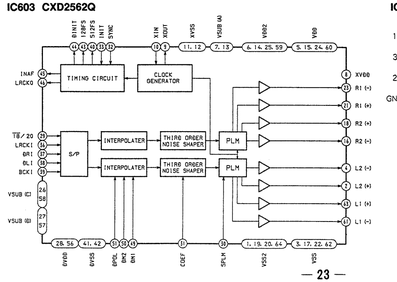
IC400, 500 CXA8042S



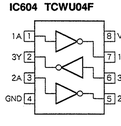
IC601 CXD8504M



IC603 CXD2562Q



IC604 TCWU04F



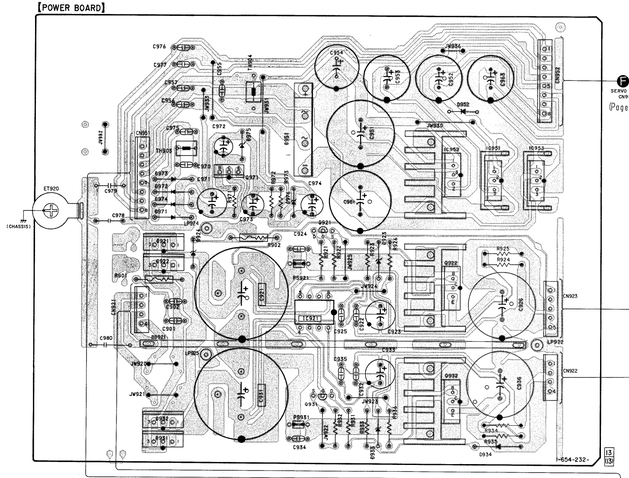
• Semiconductor Location

Ref. No.	Location
D401	I-22
D441	E-20
D471	D-20
D501	G-22
D541	E-17
D601	G-11
D602	F-13
D603	E-13
D625	G-16
D921	D-3
D922	D-3
D923	D-6
D924	D-3
D931	G-3
D932	G-3
D933	G-6
D934	G-7
D951	C-5
D952	B-7
D971, D972	D-3
D973	C-3
D974	D-3
D975	C-4
D976	D-5
IC350	C-13
IC401	J-19
IC402	I-19
IC403	I-21
IC404	I-15
IC501	F-19
IC502	G-19
IC503	G-21
IC504	F-15
IC601	I-11
IC602	G-11
IC603	H-13
IC604	H-15
IC605	H-17
IC606	F-11
IC607	G-17
IC608	H-17
IC921	E-5
IC951	C-7
IC952	C-7
IC953	C-8
Q405	I-21
Q441	G-12
Q442	E-20
Q443	J-21
Q451	F-13
Q505	G-21
Q541	G-11
Q542	E-17
Q543	F-21
Q551	E-13
Q601	F-13
Q607	E-13
Q921	D-5
Q922	E-7
Q931	F-5
Q932	F-7
Q971	C-4

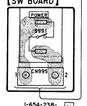
5-7. PRINTED WIRING BOARD — MAIN SECTION —

• See page 12 for Circuit Boards Location.
• See page 16 for Semiconductor Lead Layouts.

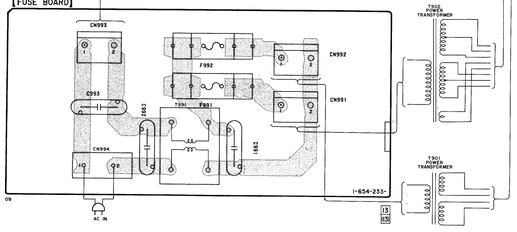
【POWER BOARD】



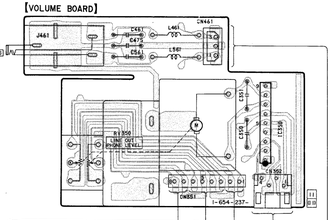
【SW BOARD】



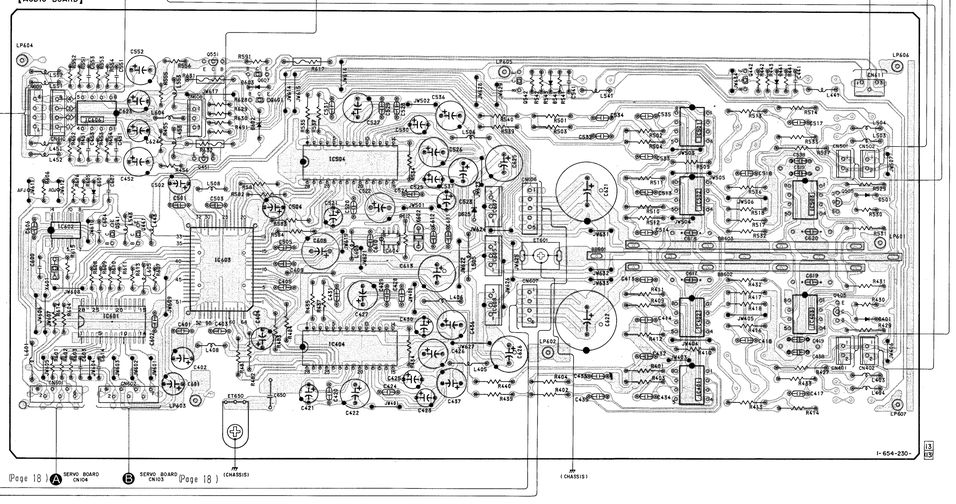
【FUSE BOARD】



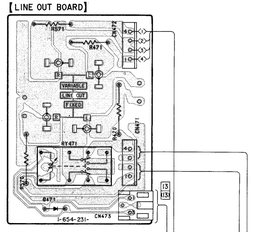
【VOLUME BOARD】



【AUDIO BOARD】

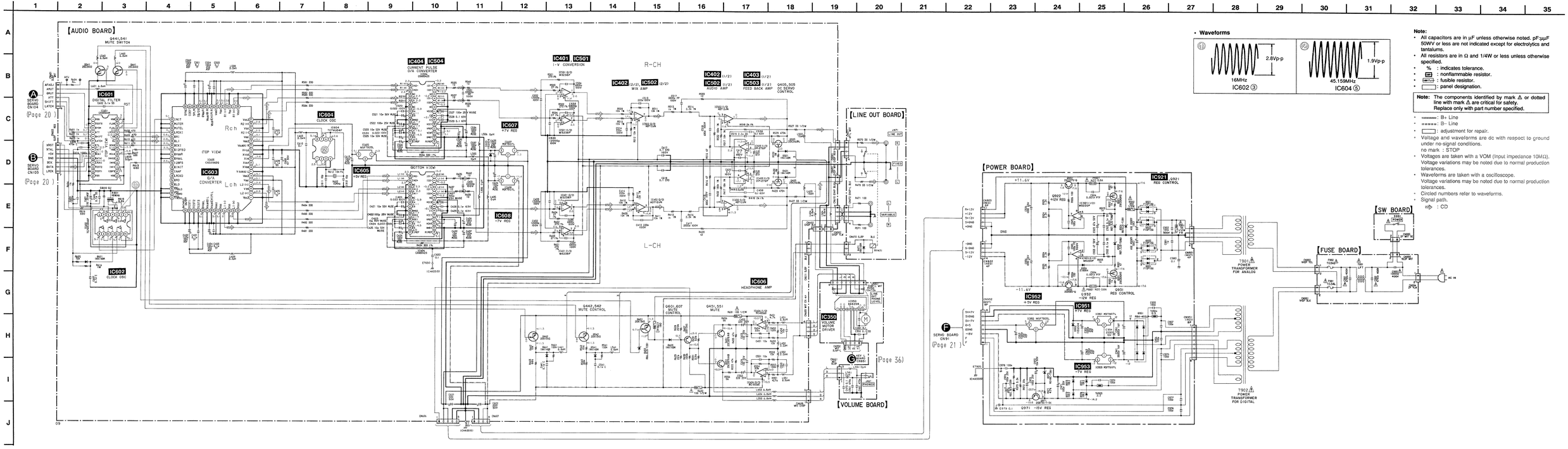


【LINE OUT BOARD】



Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ▨ : Pattern from the side which enable seeing.



• Waveforms

Note:

- All capacitors are in μF unless otherwise noted. pF:μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

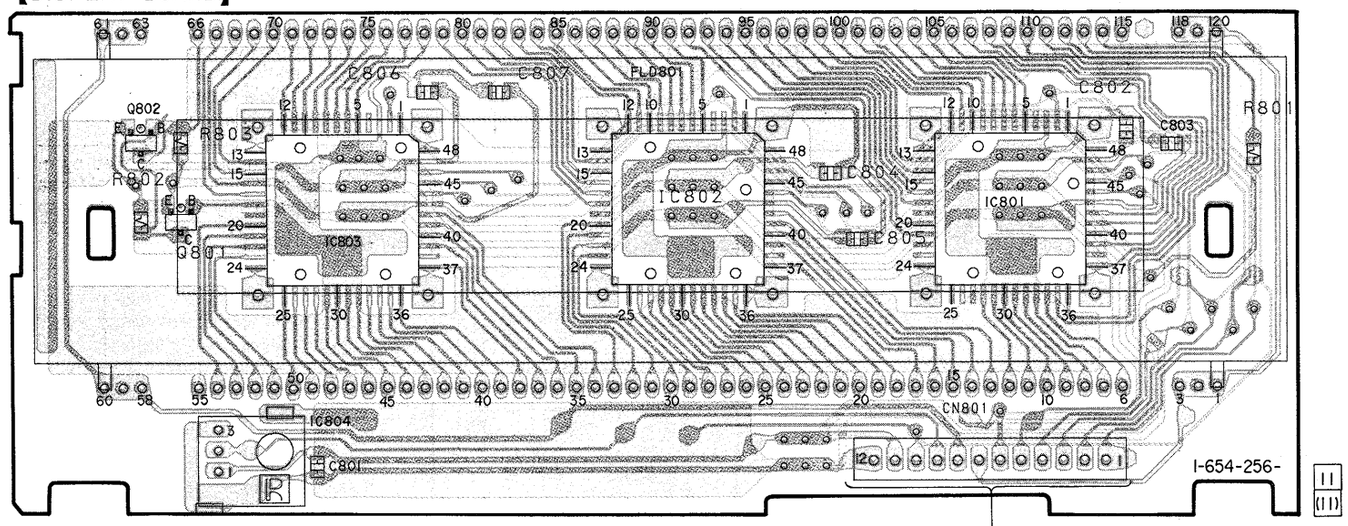
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- : B+ Line
- : B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : CD

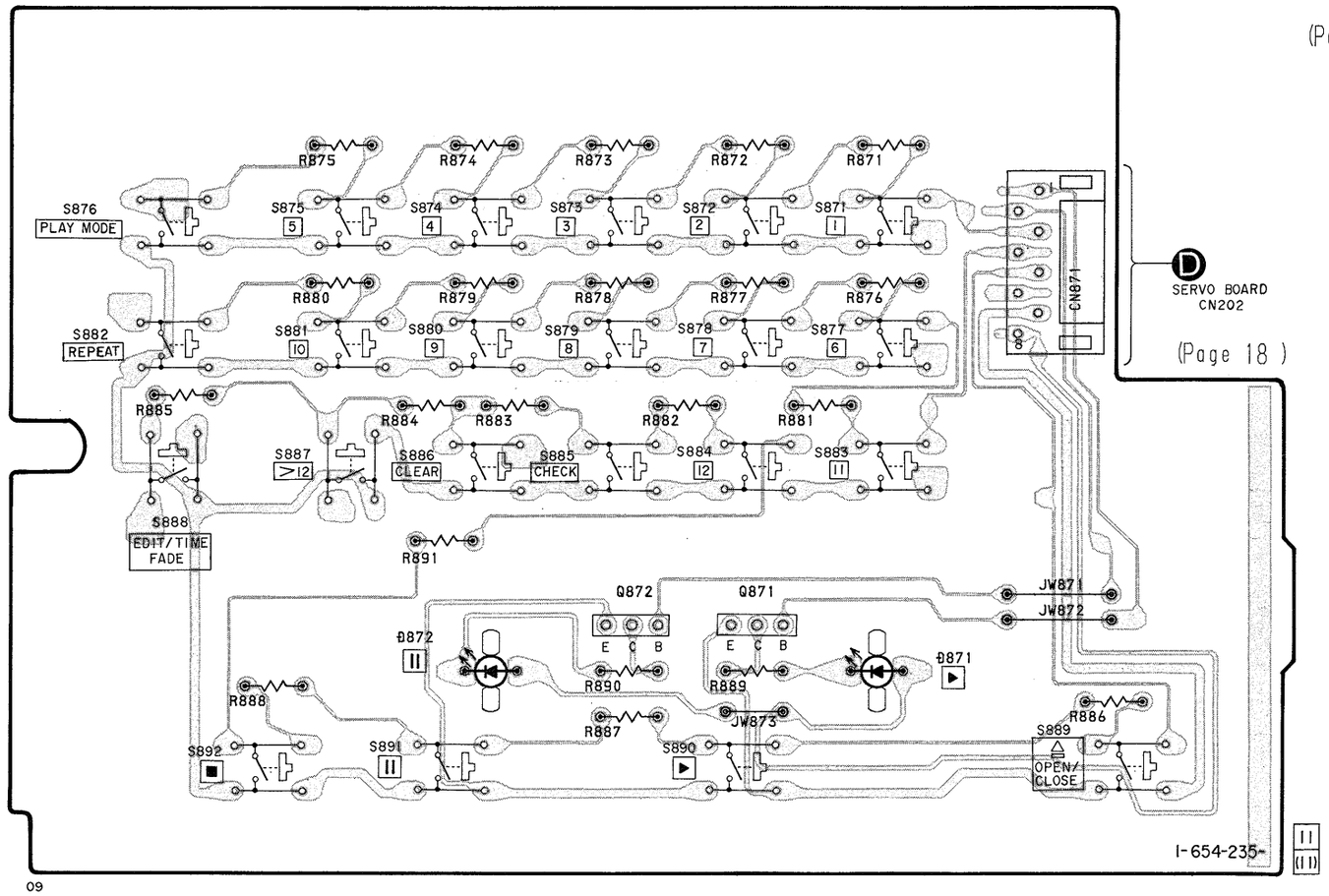
5-9. PRINTED WIRING BOARD — PANEL SECTION —

- See page 12 for Circuit Boards Location.
- See page 16 for Semiconductor Lead Layouts.

【DISPLAY BOARD】



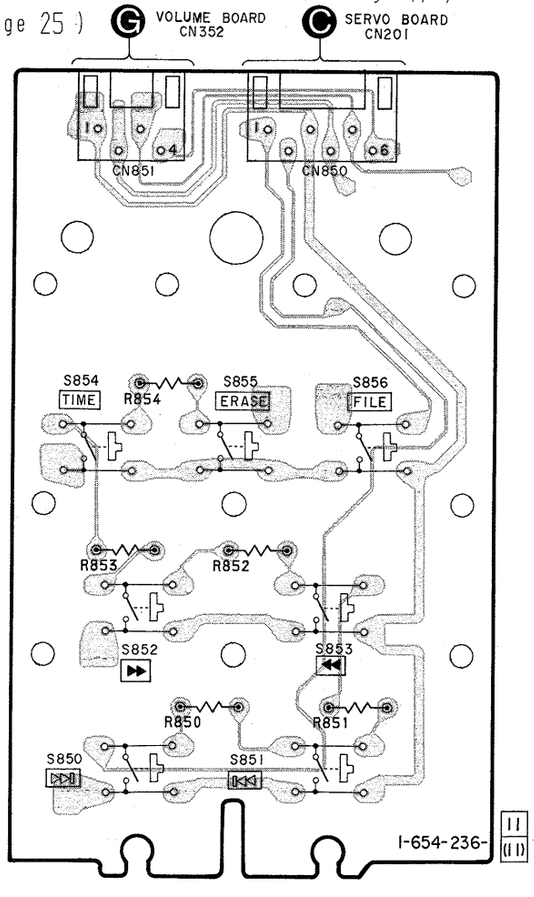
【KEY R BOARD】



(Page 17) FL RELAY BOARD CN292

D SERVO BOARD CN202 (Page 18)

【KEY L BOARD】



(Page 25) G VOLUME BOARD CN352

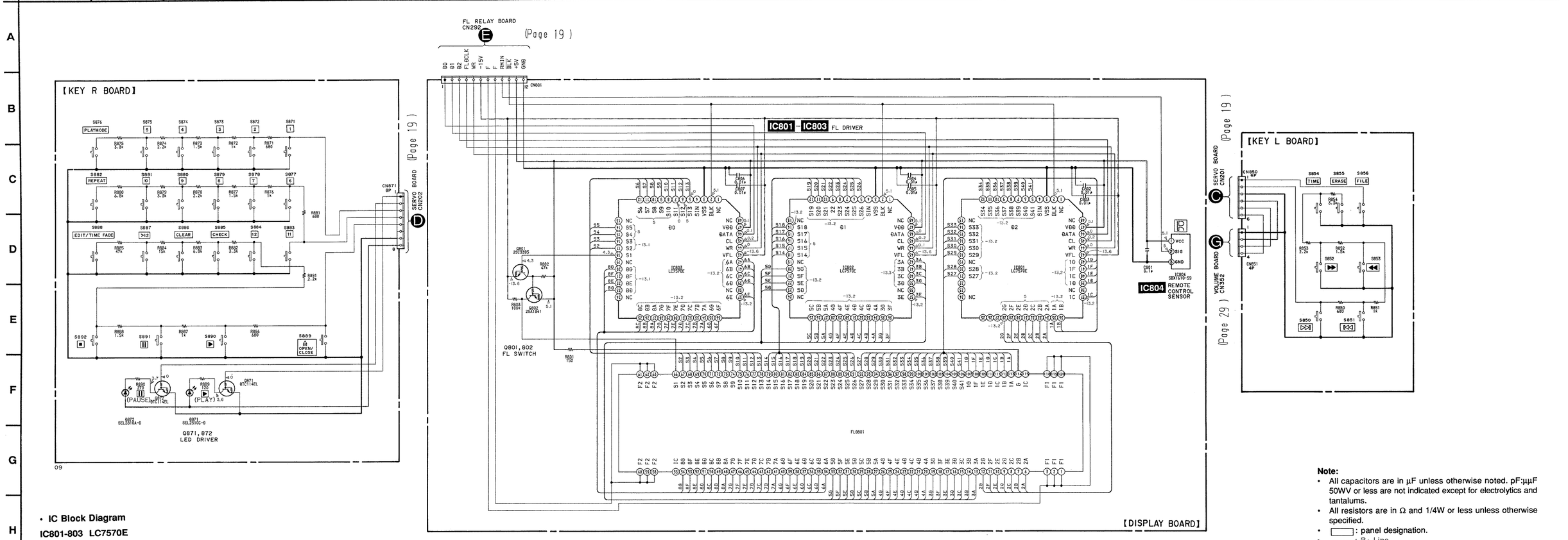
(Page 17) C SERVO BOARD CN201

Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒▒ : Pattern from the side which enable seeing.
- ▒▒ : Pattern of the rear side.

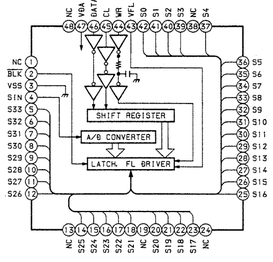
• Semiconductor Location

Ref. No.	Location
D871	G-5
D872	G-3
IC801	B-6
IC802	B-4
IC803	B-2
IC804	C-2
Q801	B-2
Q802	B-2
Q871	G-4
Q872	G-4



- **IC Block Diagram**

IC801-803 LC7570E



Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭: panel designation.
- ▬▬: B+ Line
- ▭▭▭: B– Line
- Voltage are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

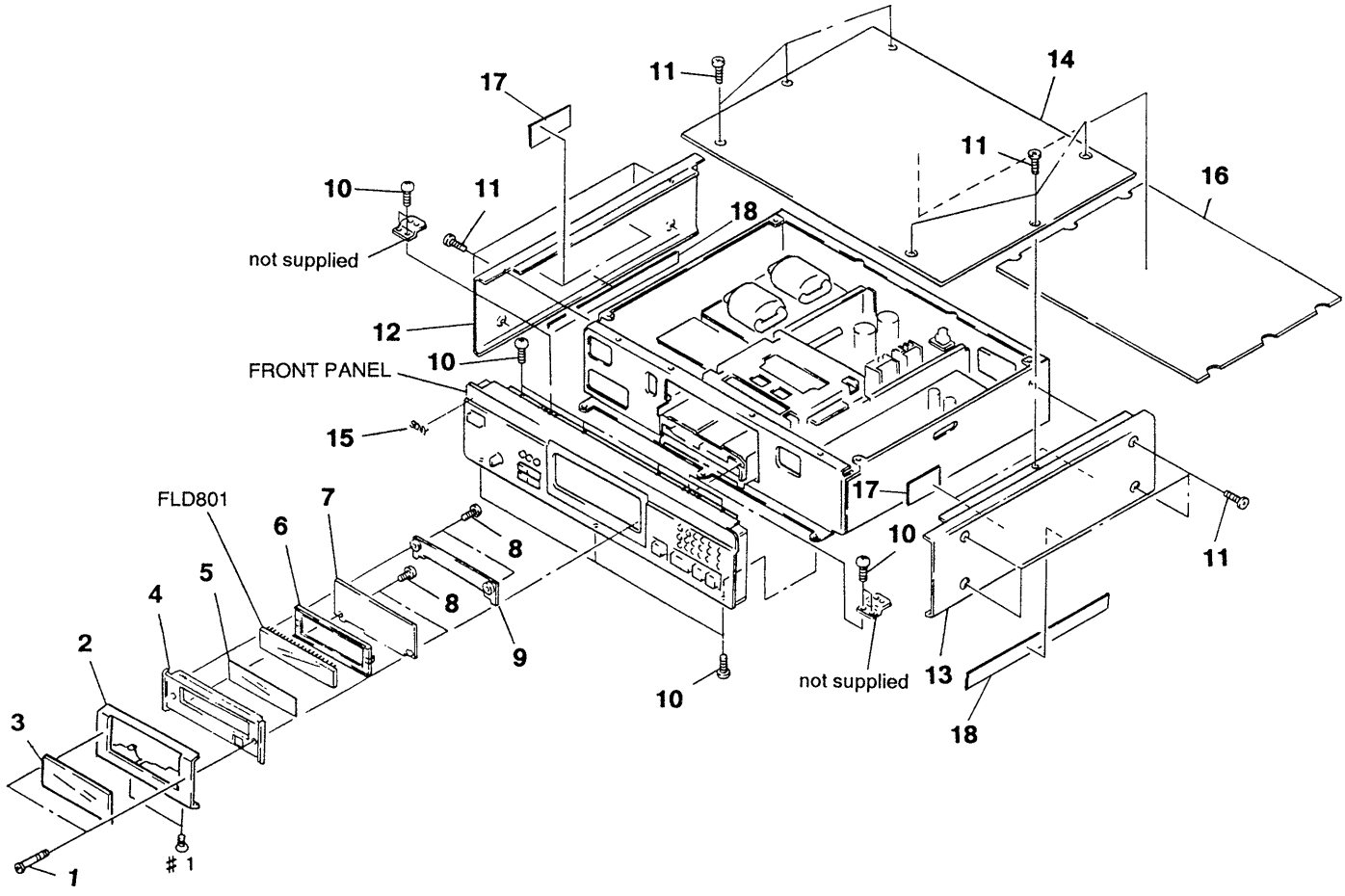
SECTION 6
EXPLODED VIEWS

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  G : German model

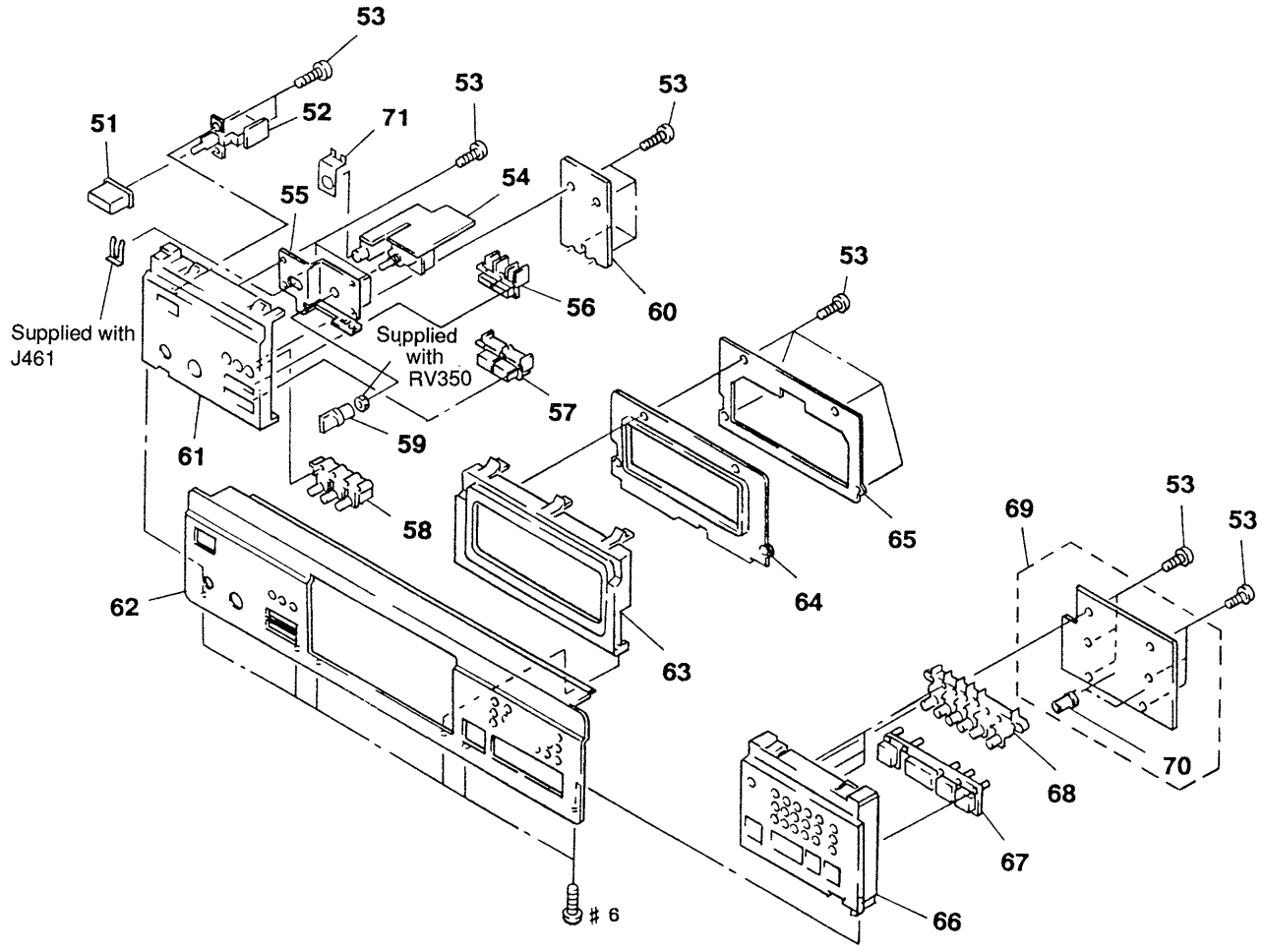
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. LOADING PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-970-998-01	BOLT (3X24), HEXAGON HOLE (BLACK).. (BLACK)	
1	4-970-998-11	BOLT (3X24), HEXAGON HOLE (SILVER).. (GOLD)	
2	4-969-830-01	PANEL, LOADING (BLACK)	
2	4-969-830-11	PANEL, LOADING (GOLD)	
3	4-969-832-01	PLATE, INDICATION	
4	4-969-831-21	BASE, LOADING PANEL (BLACK)	
4	4-969-831-31	BASE, LOADING PANEL (GOLD)	
5	4-969-834-01	FILTER	
* 6	4-969-510-01	HOLDER (FL)	
* 7	1-654-256-11	DISPLAY BOARD	
8	4-951-620-41	SCREW (2.6), +BVTP (BLACK).. (BLACK)	
8	4-951-620-51	SCREW (2.6), +BVTP (SILVER).. (GOLD)	
9	4-969-833-21	COVER, LOADING PANEL (BLACK)	
9	4-969-833-31	COVER, LOADING PANEL (GOLD)	
10	4-929-074-01	SCREW (3X8)	
11	4-924-242-11	SCREW (M3X6), FLAT HEAD (BLACK).. (BLACK)	
11	4-924-242-61	SCREW (M3X6), FLAT HEAD (SILVER).. (GOLD)	
12	4-969-823-01	PLATE (L), SIDE (BLACK)	
12	4-969-823-11	PLATE (L), SIDE (GOLD)	
13	4-969-824-01	PLATE (R), SIDE (BLACK)	
13	4-969-824-11	PLATE (R), SIDE (GOLD)	
14	4-969-821-01	CASE (TOP PLATE) (BLACK)	
14	4-969-821-11	CASE (TOP PLATE) (GOLD)	
15	4-942-568-01	EMBLEM (NO. 5), SONY (SILVER).. (BLACK)	
15	4-942-568-21	EMBLEM (NO. 5), SONY (GOLD).. (GOLD)	
* 16	A-4660-735-A	REINFORCEMENT (TOP PLATE) ASSY	
17	4-972-438-01	ABSORBENT, VIBRATION	
18	4-972-439-01	SPACER (SCREW HEAD)	
FLD801	1-517-357-11	INDICATOR TUBE, FLUORESCENT	

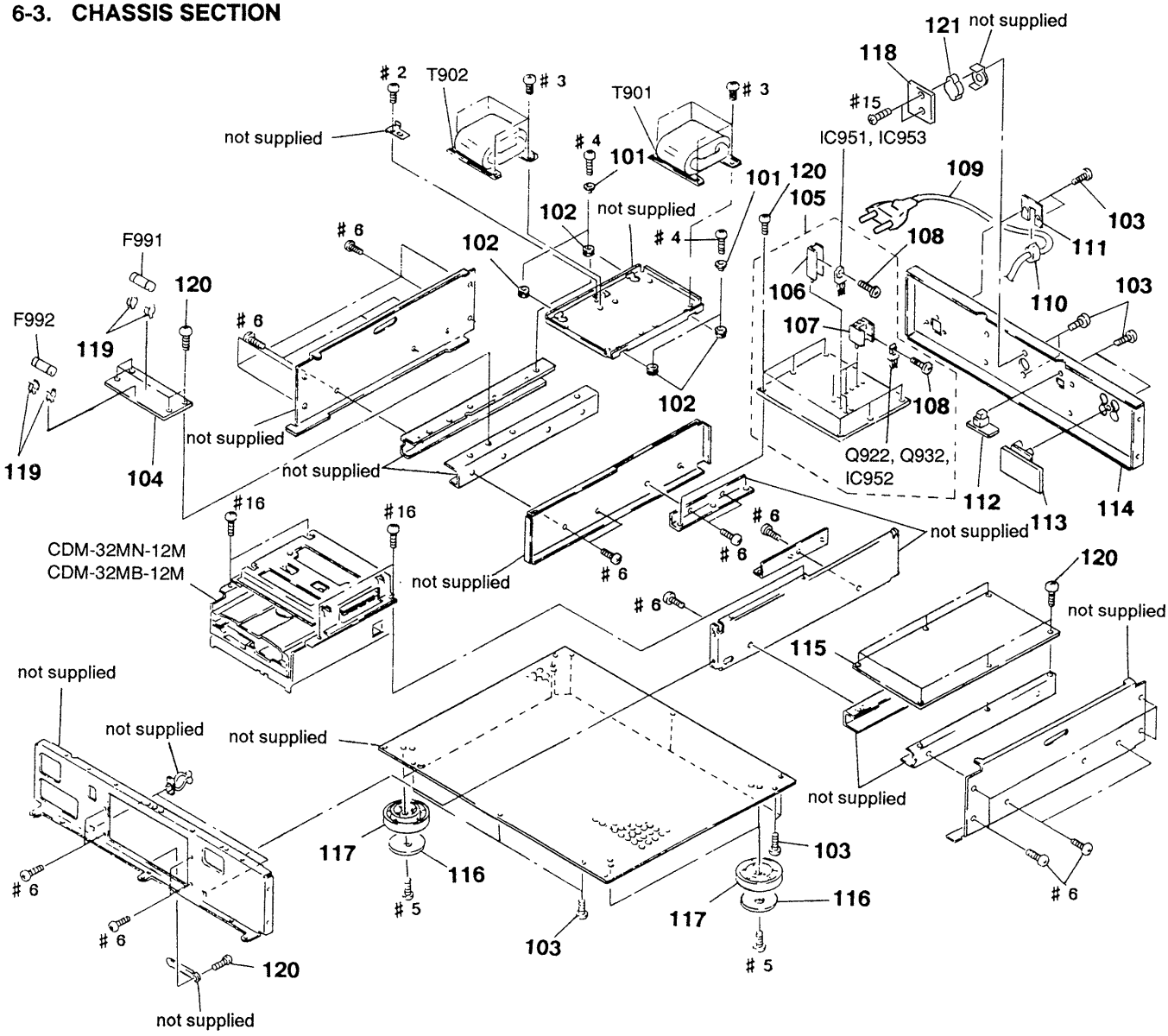
6-2. FRONT PANEL SECTION



Ref.No.	Part No.	Description	Remark
51	4-923-520-41	KNOB, POWER (GOLD)	
51	4-923-520-51	KNOB, POWER (BLACK)	
* 52	1-654-238-11	SW BOARD	
53	4-951-620-01	SCREW (2.6X8), +BVTP	
* 54	1-654-237-11	VOLUME BOARD	
* 55	4-969-478-01	BRACKET (HP)	
56	4-970-528-01	BUTTON (F.R)(BLACK)	
56	4-970-528-11	BUTTON (F.R)(GOLD)	
57	4-969-562-01	BUTTON (AMS)(BLACK)	
57	4-969-562-11	BUTTON (AMS)(GOLD)	
58	4-970-527-01	BUTTON (TIME)(BLACK)	
58	4-970-527-11	BUTTON (TIME)(GOLD)	
59	4-950-189-01	KNOB (A) (VOL)(BLACK)	
59	4-950-189-11	KNOB (A) (VOL)(GOLD)	
* 60	1-654-236-11	KEY (L) BOARD	
61	4-969-470-01	PANEL (L)(BLACK)	

Ref.No.	Part No.	Description	Remark
61	4-969-470-11	PANEL (L)(GOLD)	
62	4-969-816-01	PANEL, FRONT (BLACK)	
62	4-969-816-11	PANEL, FRONT (GOLD)	
63	4-969-817-01	PANEL (MD)(BLACK)	
63	4-969-817-11	PANEL (MD)(GOLD)	
64	4-969-818-01	PACKING	
65	4-969-819-11	RETAINER (PACKING)	
66	4-969-471-11	PANEL (R)(BLACK)	
66	4-969-471-21	PANEL (R)(GOLD)	
67	X-4945-276-1	BUTTON (PLAY) ASSY (BLACK)	
67	X-4945-311-1	BUTTON (PLAY) ASSY (GOLD)	
68	4-969-475-01	BUTTON (DIRECT)(BLACK)	
68	4-969-475-11	BUTTON (DIRECT)(GOLD)	
* 69	A-4673-285-A	KEY (R) BOARD, COMPLETE	
* 70	3-362-478-01	HOLDER (T), LED	
* 71	4-962-201-01	PLATE (HP), GROUND	

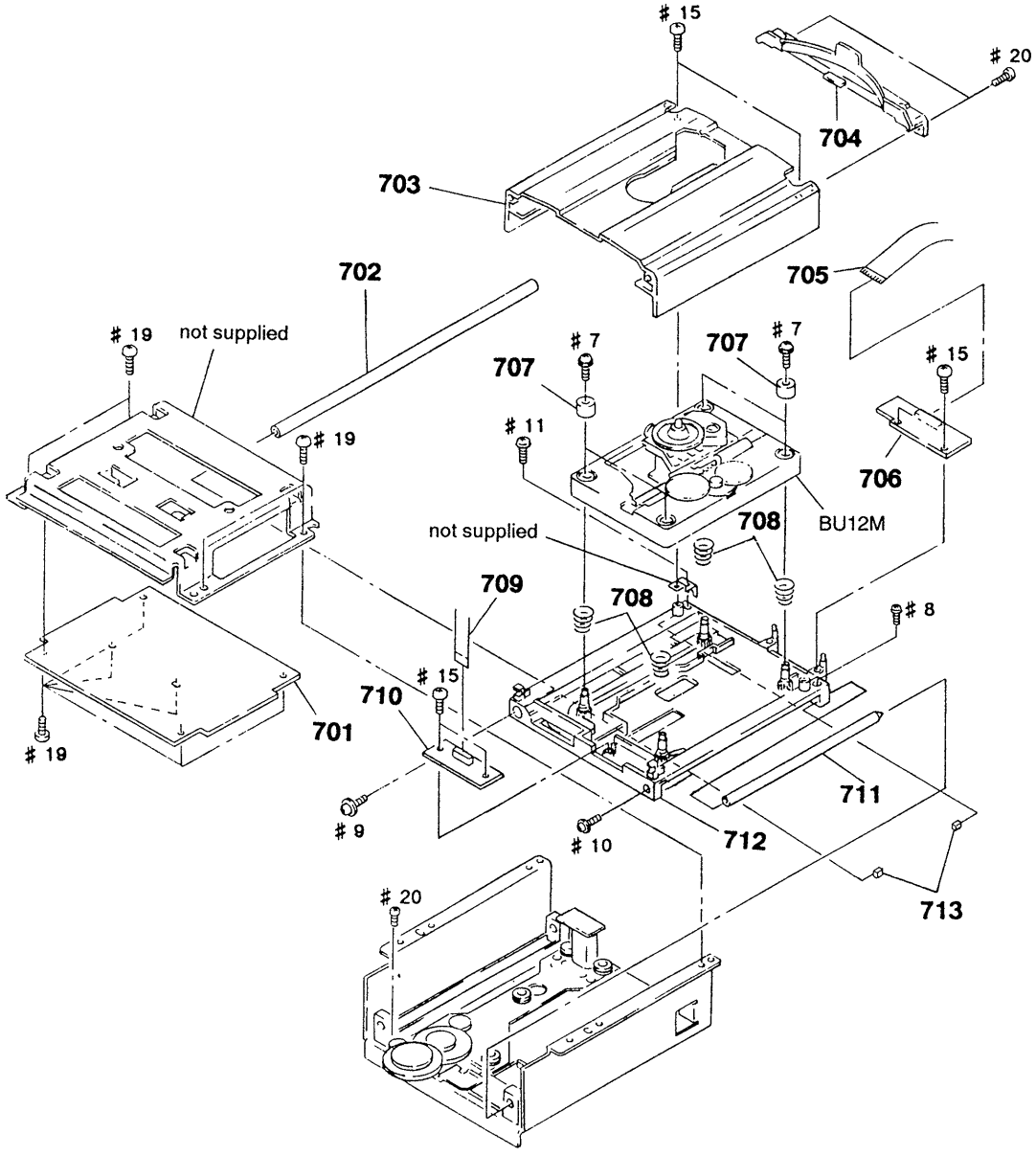
6-3. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

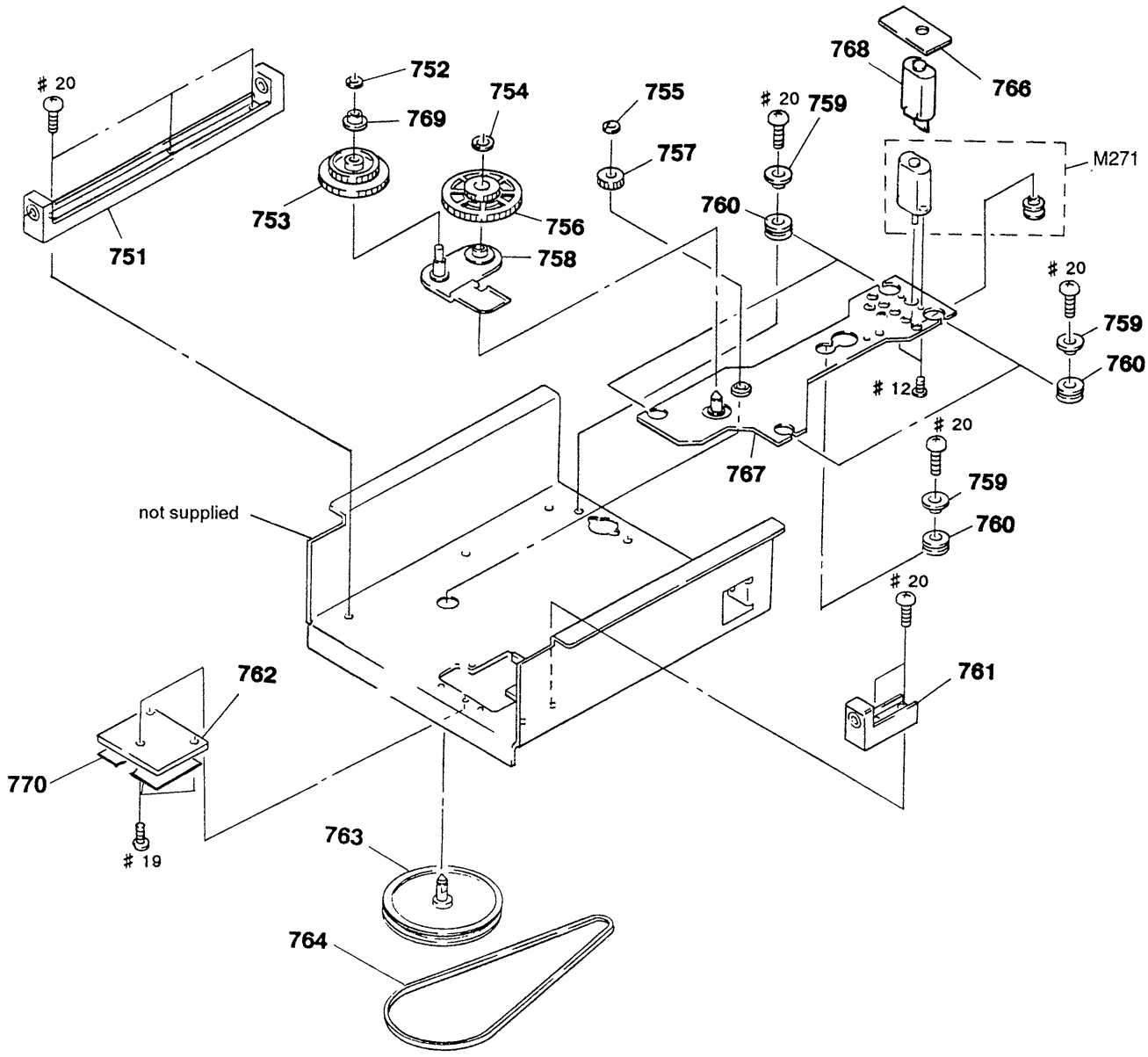
Ref. No.	Part No.	Description	Remark
101	4-928-032-01	COLLAR (A)	
* 102	4-888-798-00	BUSHING, RUBBER	
103	4-929-074-01	SCREW (3X8)	
* 104	1-654-233-11	FUSE BOARD	
* 105	A-4673-529-A	POWER BOARD, COMPLETE	
* 106	4-941-237-01	HEAT SINK	
* 107	4-363-146-00	HEAT SINK, V.OUT	
108	2-259-121-01	SCREW, TR	
⚠109	1-558-568-21	CORD, POWER	
* 110	3-703-244-00	BUSHING (2104), CORD	
* 111	4-923-873-01	BRACKET, CORD STOPPER	
* 112	1-654-234-11	OPT BOARD	
* 113	1-654-231-11	LINE OUT BOARD	
* 114	4-969-828-11	PANEL, BACK (AEP)	
* 114	4-969-828-21	PANEL, BACK (G)	
* 115	A-4673-556-A	AUDIO BOARD, COMPLETE	
116	4-970-124-01	CUSHION (F50180S)	
117	4-970-123-01	FOOT (F50180S)	
* 118	1-655-466-12	COAX BOARD	
119	1-533-233-11	HOLDER, FUSE	
120	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 121	4-913-152-01	ESCUTCHEON, D/O	
⚠F991	1-532-279-00	FUSE, TIME-LAG (0.5A 250V)	
⚠F992	1-532-279-00	FUSE, TIME-LAG (0.5A 250V)	
IC951	8-759-604-86	IC M5F7807L	
IC952	8-759-231-53	IC TA7805S	
IC953	8-759-604-90	IC M5F7907L	
Q922	8-729-107-53	TRANSISTOR 2SC2275A-P	
Q932	8-729-141-10	TRANSISTOR 2SA985A-QP	
⚠T901	1-427-816-11	TRANSFORMER, POWER	
⚠T902	1-427-817-11	TRANSFORMER, POWER	

6-4. CD MECHANISM SECTION-1 (CDM32MN-12M/CDM32MB-12M)



Ref. No.	Part No.	Description	Remark
* 701	A-4673-224-A	SERVO BOARD, COMPLETE	
* 702	4-968-903-01	SHAFT (MAIN)	
703	4-968-907-11	PANEL (DRAWER)	
704	4-971-000-21	COVER (CD) (BLACK)	
704	4-971-000-31	COVER (CD) (GOLD)	
705	1-769-110-11	WIRE (FLAT TYPE) (26 CORE)	
* 706	1-654-005-11	FLEX RELAY BOARD	
707	4-927-634-01	HOLDER (SP)	
708	4-948-375-01	SPRING (F), COIL	
709	1-769-109-11	WIRE (FLAT TYPE) (12 CORE)	
* 710	1-653-906-11	FL RELAY BOARD	
* 711	4-968-904-01	SHAFT (SUB)	
* 712	4-968-906-01	HOLDER, BU	
713	4-925-315-31	DAMPER	

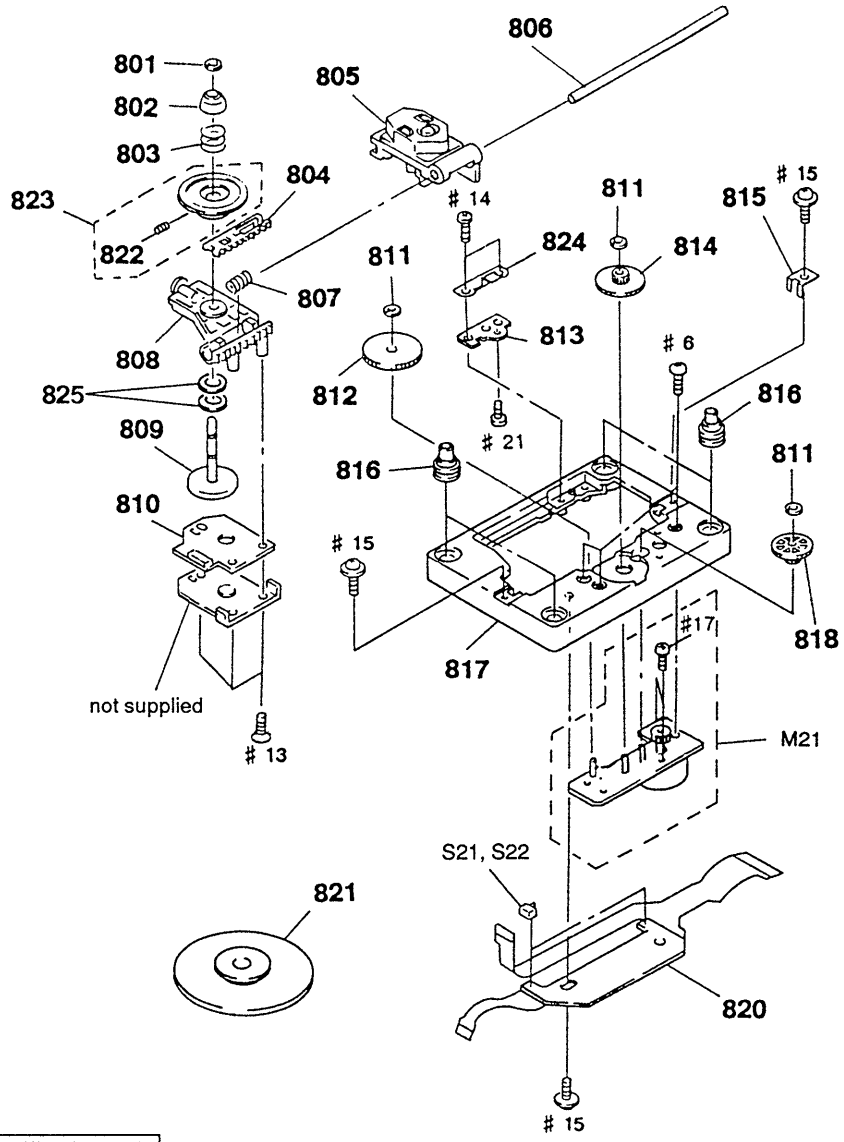
6-5. CD MECHANISM SECTION-2 (CDM32MN-12M/CDM32MB-12M)



Ref. No.	Part No.	Description	Remark
* 751	4-968-901-01	BEARING (MAIN)	
752	3-325-697-31	WASHER	
753	4-968-900-01	GEAR (LAST)	
754	3-363-191-01	WASHER (BA)	
755	4-973-849-01	WASHER	
756	4-968-899-01	GEAR (MIDLE)	
757	4-968-898-01	GEAR (FIRST)	
758	X-4945-207-1	BRACKET (LAST) ASSY	
* 759	4-928-026-01	COLLAR (B)	
* 760	4-888-798-11	BUSHING, RUBBER	

Ref. No.	Part No.	Description	Remark
* 761	4-968-902-01	BEARING (SUB)	
* 762	1-653-905-11	LOADING SW BOARD	
763	X-4945-209-1	PULLEY (FIRST) ASSY	
764	4-968-905-01	BELT (CDM)	
* 766	1-653-907-11	LOADING MOTOR BOARD	
767	X-4945-205-1	SHAFT ASSY	
768	4-971-894-01	DAMPER (MOTOR)	
* 769	4-970-999-01	ROLLER (J RACK)	
* 770	4-972-921-01	COVER (SW)	
M271	X-4945-565-1	MOTOR ASSY (LOADING)	

6-6. BASE UNIT SECTION (BU-12M)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
801	4-968-871-01	WASHER (SPINDLE)	
802	4-968-867-01	CAP, CENTERING	
803	4-968-869-01	SPRING (CENTERING), COMPRESSION	
804	4-968-870-01	RACK, SLIDE	
⚠805	8-848-368-11	OPTICAL PICK-UP BLOCK KSS-273A/J-N	
* 806	4-968-944-01	SHAFT, SLED	
807	4-968-880-01	SPRING (SLED), COMPRESSION	
808	X-4945-203-1	BASE ASSY, SLIDE	
809	X-4945-273-1	ROTOR ASSY	
810	A-4673-222-A	BSL BOARD, COMPLETE	
811	3-364-731-01	WASHER, POLY-SLIDER	
812	4-968-866-01	GEAR (D)	
813	4-968-916-01	BRACKET (OP BASE)	
814	4-968-865-01	GEAR (C)	
815	4-968-879-01	SPRING (OP), LEAF	
816	4-917-562-11	INSULATOR	
* 817	4-968-862-01	BASE, MECHANICAL	
818	4-968-864-01	GEAR (B)	
820	1-653-918-11	FLEXIBLE BOARD	
821	A-4660-688-A	STABILIZER ASSY	
822	4-971-266-01	SCREW (M2.6X4)	
823	A-4660-814-A	PULLEY ASSY, DISK	
824	4-970-924-01	SPRING (SKEW), LEAF	
825	3-701-444-11	WASHER, 6	
M21	X-4945-920-1	MOTOR ASSY (SLED)	
S21	1-571-958-11	SWITCH, PUSH (1 KEY) (LIMIT OUT)	
S22	1-571-958-11	SWITCH, PUSH (1 KEY) (LIMIT IN)	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "＊" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remark
*	A-4673-556-A	AUDIO BOARD, COMPLETE			
		**********			
		< BUS BAR >			
* BB601	1-691-279-11	BUS BAR 5P			
* BB602	1-580-302-11	BAR, BUS 4P			
* BB603	1-580-302-11	BAR, BUS 4P			
* BB921	1-566-940-11	BUS BAR 6P			
		< CAPACITOR >			
C401	1-136-165-00	FILM	0.1uF	5%	50V
C402	1-126-023-11	ELECT	100uF	20%	25V
C403	1-136-165-00	FILM	0.1uF	5%	50V
C404	1-126-023-11	ELECT	100uF	20%	25V
C405	1-136-165-00	FILM	0.1uF	5%	50V
C413	1-136-810-11	FILM	220PF	5%	100V
C414	1-136-810-11	FILM	220PF	5%	100V
C417	1-136-593-11	FILM	0.0033uF	3%	100V
C418	1-136-813-11	FILM	680PF	5%	100V
C419	1-104-646-11	CERAMIC	2.2uF	20%	50V
C420	1-130-973-00	FILM	0.022uF	5%	100V
C421	1-126-059-11	ELECT	10uF	20%	50V
C422	1-124-122-11	ELECT	100uF	20%	50V
C423	1-126-059-11	ELECT	10uF	20%	50V
C424	1-130-973-00	FILM	0.022uF	5%	100V
C425	1-126-059-11	ELECT	10uF	20%	50V
C426	1-124-122-11	ELECT	100uF	20%	50V
C427	1-124-122-11	ELECT	100uF	20%	50V
C428	1-136-850-11	FILM	0.1uF	5%	63V
C429	1-136-850-11	FILM	0.1uF	5%	63V
C430	1-126-059-11	ELECT	10uF	20%	50V
C431	1-130-973-00	FILM	0.022uF	3%	100V
C432	1-130-969-11	FILM	0.012uF	3%	100V
C433	1-130-969-11	FILM	0.012uF	3%	100V
C434	1-130-856-00	FILM	0.0068uF	3%	100V
C435	1-130-856-00	FILM	0.0068uF	3%	100V
C436	1-124-122-11	ELECT	100uF	20%	50V
C437	1-124-122-11	ELECT	100uF	20%	50V
C438	1-136-850-11	FILM	0.1uF	5%	63V
C441	1-164-159-11	CERAMIC	0.1uF		50V
C451	1-162-199-31	CERAMIC	10PF	5%	50V
C452	1-126-024-11	ELECT	220uF	20%	25V
C453	1-162-199-31	CERAMIC	10PF	5%	50V
C501	1-136-165-00	FILM	0.1uF	5%	50V
C502	1-126-023-11	ELECT	100uF	20%	25V
C503	1-136-165-00	FILM	0.1uF	5%	50V
C504	1-126-023-11	ELECT	100uF	20%	25V
C505	1-136-165-00	FILM	0.1uF	5%	50V
C513	1-136-810-11	FILM	220PF	5%	100V
C514	1-136-810-11	FILM	220PF	5%	100V
C517	1-136-593-11	FILM	0.0033uF	3%	100V
C518	1-136-813-11	FILM	680PF	5%	100V
C519	1-104-646-11	CERAMIC	2.2uF	20%	50V
C520	1-130-973-00	FILM	0.022uF	5%	100V
C521	1-126-059-11	ELECT	10uF	20%	50V
C522	1-126-024-11	ELECT	220uF	20%	25V
C523	1-126-059-11	ELECT	10uF	20%	50V
C524	1-130-973-00	FILM	0.022uF	5%	100V
C525	1-126-059-11	ELECT	10uF	20%	50V
C526	1-124-122-11	ELECT	100uF	20%	50V
C527	1-124-122-11	ELECT	100uF	20%	50V
C528	1-136-850-11	FILM	0.1uF	5%	63V
C529	1-136-850-11	FILM	0.1uF	5%	63V
C530	1-126-059-11	ELECT	10uF	20%	50V
C531	1-130-973-00	FILM	0.022uF	3%	100V
C532	1-130-969-11	FILM	0.012uF	3%	100V
C533	1-130-969-11	FILM	0.012uF	3%	100V
C534	1-130-856-00	FILM	0.0068uF	3%	100V
C535	1-130-856-00	FILM	0.0068uF	3%	100V
C536	1-124-122-11	ELECT	100uF	20%	50V
C537	1-124-122-11	ELECT	100uF	20%	50V
C538	1-136-850-11	FILM	0.1uF	5%	63V
C541	1-164-159-11	CERAMIC	0.1uF		50V
C551	1-162-199-31	CERAMIC	10PF	5%	50V
C552	1-124-122-11	ELECT	100uF	20%	50V
C553	1-162-199-31	CERAMIC	10PF	5%	50V
C600	1-164-159-11	CERAMIC	0.1uF		50V
C601	1-126-023-11	ELECT	100uF	20%	25V
C602	1-162-806-11	CERAMIC	0.1uF	10%	50V
C603	1-162-290-31	CERAMIC	470PF	10%	50V
C604	1-162-294-31	CERAMIC	0.001uF	10%	50V
C606	1-162-806-11	CERAMIC	0.1uF	10%	50V
C607	1-164-159-11	CERAMIC	0.1uF		50V
C608	1-124-918-11	ELECT	47uF	20%	63V
C609	1-162-806-11	CERAMIC	0.1uF	10%	50V

AUDIO

Ref.No.	Part No.	Description			Remark
C610	1-162-806-11	CERAMIC	0.1uF	10%	50V
C611	1-102-947-00	CERAMIC	10PF	5%	50V
C612	1-102-947-00	CERAMIC	10PF	5%	50V
C613	1-126-365-51	ELECT	100uF	20%	63V
C614	1-162-294-31	CERAMIC	0.001uF	10%	50V
C617	1-136-960-11	FILM	0.1uF	10%	160V
C618	1-136-960-11	FILM	0.1uF	10%	160V
C619	1-136-960-11	FILM	0.1uF	10%	160V
C620	1-136-960-11	FILM	0.1uF	10%	160V
C621	1-124-919-11	ELECT	220uF	20%	63V
C622	1-124-919-11	ELECT	220uF	20%	63V
C623	1-126-023-11	ELECT	100uF	20%	25V
C624	1-126-023-11	ELECT	100uF	20%	25V
C625	1-126-365-51	ELECT	100uF	20%	63V
C626	1-126-365-51	ELECT	100uF	20%	63V
C650	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN401	1-564-505-11	PLUG, CONNECTOR 2P			
* CN402	1-564-505-11	PLUG, CONNECTOR 2P			
* CN501	1-564-505-11	PLUG, CONNECTOR 2P			
* CN502	1-564-505-11	PLUG, CONNECTOR 2P			
* CN601	1-691-462-11	PIN, CONNECTOR (PC BOARD) 6P			
CN602	1-691-463-31	PIN, CONNECTOR (PC BOARD) 7P			
CN608	1-564-506-11	PLUG, CONNECTOR 3P			
* CN609	1-564-507-11	PLUG, CONNECTOR 4P			
* CN610	1-564-507-11	PLUG, CONNECTOR 4P			
CN611	1-691-459-21	PIN, CONNECTOR (PC BOARD) 3P			
		< DIODE >			
D401	8-719-987-63	DIODE	1N4148M		
D441	8-719-987-63	DIODE	1N4148M		
D501	8-719-987-63	DIODE	1N4148M		
D541	8-719-987-63	DIODE	1N4148M		
D601	8-719-987-63	DIODE	1N4148M		
D602	8-719-115-65	DIODE	RD6.8JS-T2B1		
D603	8-719-987-63	DIODE	1N4148M		
D625	8-719-210-21	DIODE	11EQS04		
		< TERMINAL >			
ET601	4-924-264-01	TERMINAL, MOUNT			
ET650	1-537-770-21	TERMINAL, GROUND			
		< IC >			
IC401	8-759-602-83	IC	M5238P		
IC402	8-759-971-80	IC	AD712JN		
IC403	8-759-053-07	IC	OP-27GP		
IC404	8-759-293-17	IC	CXA8042S		
IC501	8-759-602-83	IC	M5238P		
IC502	8-759-971-80	IC	AD712JN		
IC503	8-759-053-07	IC	OP-27GP		
IC504	8-759-293-17	IC	CXA8042S		
IC601	8-759-287-69	IC	CXD8504M		
IC602	8-759-233-64	IC	TC74HCU04AF		
IC603	8-759-044-10	IC	CXD2562Q		
IC604	8-759-242-70	IC	TC7WU04F		
IC605	8-759-231-53	IC	TA7805S		
IC606	8-759-981-85	IC	RC4556D		
IC607	8-759-604-86	IC	M5F7807L		
IC608	8-759-604-90	IC	M5F7907L		
		< COIL >			
L403	1-414-514-21	INDUCTOR	10uH		
L404	1-414-512-21	INDUCTOR	6.8uH		
L405	1-412-473-21	INDUCTOR	0uH		
L406	1-412-473-21	INDUCTOR	0uH		
L408	1-414-510-21	INDUCTOR	3.3uH		
L441	1-414-512-21	INDUCTOR	6.8uH		
L443	1-414-512-21	INDUCTOR	6.8uH		
L451	1-414-512-21	INDUCTOR	6.8uH		
L452	1-414-509-21	INDUCTOR	2.2uH		
L453	1-414-512-21	INDUCTOR	6.8uH		
L503	1-414-514-21	INDUCTOR	10uH		
L504	1-414-512-21	INDUCTOR	6.8uH		
L505	1-412-473-21	INDUCTOR	0uH		
L506	1-412-473-21	INDUCTOR	0uH		
L508	1-414-510-21	INDUCTOR	3.3uH		
L541	1-414-512-21	INDUCTOR	6.8uH		
L543	1-414-512-21	INDUCTOR	6.8uH		
L551	1-414-512-21	INDUCTOR	6.8uH		
L552	1-414-509-21	INDUCTOR	2.2uH		
L553	1-414-512-21	INDUCTOR	6.8uH		
L601	1-414-512-21	INDUCTOR	6.8uH		
L603	1-414-510-21	INDUCTOR	3.3uH		
L604	1-414-512-21	INDUCTOR	6.8uH		
L605	1-414-510-21	INDUCTOR	3.3uH		
		< TRANSISTOR >			
Q405	8-729-224-63	TRANSISTOR	2SK246-BL		
Q441	8-729-900-80	TRANSISTOR	DTC114ES		
Q442	8-729-900-65	TRANSISTOR	DTA144ES		
Q451	8-729-231-55	TRANSISTOR	2SC2878-AB		
Q505	8-729-224-63	TRANSISTOR	2SK246-BL		
Q541	8-729-900-80	TRANSISTOR	DTC114ES		
Q542	8-729-900-65	TRANSISTOR	DTA144ES		
Q551	8-729-231-55	TRANSISTOR	2SC2878-AB		
Q601	8-729-900-65	TRANSISTOR	DTA144ES		
Q607	8-729-900-65	TRANSISTOR	DTA144ES		

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R401	1-249-909-11	CARBON	270	1%	1/4W	
R402	1-249-909-11	CARBON	270	1%	1/4W	
R403	1-249-885-11	CARBON	27	1%	1/4W	
R404	1-249-885-11	CARBON	27	1%	1/4W	
R409	1-249-947-11	CARBON	10K	1%	1/4W	
R410	1-249-947-11	CARBON	10K	1%	1/4W	
R411	1-249-950-11	CARBON	13K	1%	1/4W	
R412	1-249-950-11	CARBON	13K	1%	1/4W	
R413	1-249-923-11	CARBON	1K	1%	1/4W	
R414	1-249-931-11	CARBON	2.2K	1%	1/4W	
R416	1-249-520-11	CARBON	47	5%	1/4W	
R417	1-249-461-11	CARBON	18K	5%	1/4W	
R418	1-249-930-11	CARBON	2K	1%	1/4W	
R427	1-249-637-11	CARBON	33	5%	1/2W	
R429	1-249-616-11	CARBON	470K	5%	1/4W	
R430	1-259-500-11	CARBON	1M	5%	1/6W	
R431	1-249-616-11	CARBON	470K	5%	1/4W	
R432	1-249-977-11	CARBON	180K	1%	1/4W	
R433	1-249-506-11	CARBON	12	5%	1/4W	
R434	1-247-706-11	CARBON	330	5%	1/4W	F
R435	1-249-504-11	CARBON	10	5%	1/4W	
R437	1-249-504-11	CARBON	10	5%	1/4W	
R439	1-249-504-11	CARBON	10	5%	1/4W	
R440	1-249-504-11	CARBON	10	5%	1/4W	
R441	1-259-476-11	CARBON	100K	5%	1/6W	
R442	1-259-452-11	CARBON	10K	5%	1/6W	
R443	1-259-472-11	CARBON	68K	5%	1/6W	
R451	1-259-444-11	CARBON	4.7K	5%	1/6W	
R452	1-259-476-11	CARBON	100K	5%	1/6W	
R453	1-259-456-11	CARBON	15K	5%	1/6W	
R454	1-259-464-11	CARBON	33K	5%	1/6W	
R455	1-259-468-11	CARBON	47K	5%	1/6W	
R456	1-259-398-11	CARBON	56	5%	1/6W	
R481	1-259-416-11	CARBON	330	5%	1/6W	
R482	1-259-416-11	CARBON	330	5%	1/6W	
R483	1-259-416-11	CARBON	330	5%	1/6W	
R484	1-259-416-11	CARBON	330	5%	1/6W	
R491	1-259-440-11	CARBON	3.3K	5%	1/6W	
R501	1-249-909-11	CARBON	270	1%	1/4W	
R502	1-249-909-11	CARBON	270	1%	1/4W	
R503	1-249-885-11	CARBON	27	1%	1/4W	
R504	1-249-885-11	CARBON	27	1%	1/4W	
R509	1-249-947-11	CARBON	10K	1%	1/4W	
R510	1-249-947-11	CARBON	10K	1%	1/4W	
R511	1-249-950-11	CARBON	13K	1%	1/4W	
R512	1-249-950-11	CARBON	13K	1%	1/4W	
R513	1-249-923-11	CARBON	1K	1%	1/4W	
R514	1-249-931-11	CARBON	2.2K	1%	1/4W	
R516	1-249-520-11	CARBON	47	5%	1/4W	
R517	1-249-461-11	CARBON	18K	5%	1/4W	
R518	1-249-930-11	CARBON	2K	1%	1/4W	
R527	1-249-637-11	CARBON	33	5%	1/2W	
R529	1-249-616-11	CARBON	470K	5%	1/4W	
R530	1-259-500-11	CARBON	1M	5%	1/6W	
R531	1-249-616-11	CARBON	470K	5%	1/4W	
R532	1-249-977-11	CARBON	180K	1%	1/4W	
R533	1-249-506-11	CARBON	12	5%	1/4W	
R534	1-247-706-11	CARBON	330	5%	1/4W	F
R535	1-249-504-11	CARBON	10	5%	1/4W	
R537	1-249-504-11	CARBON	10	5%	1/4W	
R539	1-249-504-11	CARBON	10	5%	1/4W	
R540	1-249-504-11	CARBON	10	5%	1/4W	
R541	1-259-476-11	CARBON	100K	5%	1/6W	
R542	1-259-452-11	CARBON	10K	5%	1/6W	
R543	1-259-472-11	CARBON	68K	5%	1/6W	
R551	1-259-444-11	CARBON	4.7K	5%	1/6W	
R552	1-259-476-11	CARBON	100K	5%	1/6W	
R553	1-259-456-11	CARBON	15K	5%	1/6W	
R554	1-259-464-11	CARBON	33K	5%	1/6W	
R555	1-259-468-11	CARBON	47K	5%	1/6W	
R556	1-259-398-11	CARBON	56	5%	1/6W	
R581	1-259-416-11	CARBON	330	5%	1/6W	
R582	1-259-416-11	CARBON	330	5%	1/6W	
R583	1-259-416-11	CARBON	330	5%	1/6W	
R584	1-259-416-11	CARBON	330	5%	1/6W	
R591	1-259-440-11	CARBON	3.3K	5%	1/6W	
R601	1-259-428-11	CARBON	1K	5%	1/6W	
R602	1-259-428-11	CARBON	1K	5%	1/6W	
R603	1-259-428-11	CARBON	1K	5%	1/6W	
R604	1-259-428-11	CARBON	1K	5%	1/6W	
R605	1-259-452-11	CARBON	10K	5%	1/6W	
R606	1-259-424-11	CARBON	680	5%	1/6W	
R607	1-259-424-11	CARBON	680	5%	1/6W	
R608	1-259-420-11	CARBON	470	5%	1/6W	
R609	1-259-420-11	CARBON	470	5%	1/6W	
R610	1-259-420-11	CARBON	470	5%	1/6W	
R611	1-259-420-11	CARBON	470	5%	1/6W	
R612	1-249-947-11	CARBON	10K	1%	1/4W	
R613	1-259-424-11	CARBON	680	5%	1/6W	
R614	1-259-416-11	CARBON	330	5%	1/6W	
R615	1-259-448-11	CARBON	6.8K	5%	1/6W	
R616	1-259-500-11	CARBON	1M	5%	1/6W	
⚠R617	1-212-887-00	FUSIBLE	180	5%	1/4W	F
R628	1-259-484-11	CARBON	220K	5%	1/6W	
R629	1-259-460-11	CARBON	22K	5%	1/6W	
R630	1-259-476-11	CARBON	100K	5%	1/6W	
⚠R631	1-219-022-11	FUSIBLE	100	5%	1/2W	
⚠R632	1-219-022-11	FUSIBLE	100	5%	1/2W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

AUDIO | BSL | COAX | DISPLAY | FL RELAY | FLEX RELAY

Ref.No.	Part No.	Description	Remark
		< VIBRATOR >	
X601	1-577-685-11	FILTER, CRYSTAL (16MHz)	
X602	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)	
**********			
	A-4673-222-A	BSL BOARD, COMPLETE	
		**********	
		< HALL ELEMENT >	
H11	8-719-987-62	DIODE LT140SC-TE84L	
H12	8-719-987-62	DIODE LT140SC-TE84L	
		< RESISTOR >	
R11	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R12	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R13	1-216-295-91	CONDUCTOR, CHIP (2012)	
R14	1-216-295-91	CONDUCTOR, CHIP (2012)	
R15	1-216-295-91	CONDUCTOR, CHIP (2012)	
**********			
*	1-655-466-12	COAX BOARD	
		**********	
		< CAPACITOR >	
C702	1-104-645-11	CERAMIC 1uF 20% 50V	
C703	1-162-806-11	CERAMIC 0.1uF 10% 50V	
C704	1-136-165-00	FILM 0.1uF 5% 50V	
C705	1-107-611-11	MICA 100PF 5% 500V	
C706	1-162-806-11	CERAMIC 0.1uF 10% 50V	
		< CONNECTOR >	
CN703	1-580-771-31	PIN, CONNECTOR (PC BOARD) 3P	
		< IC >	
IC702	8-759-917-18	IC SN74HCU04AN	
		< JACK >	
J701	1-507-567-71	JACK, PIN 1P (DIGITAL OUT COAXIAL)	
		< RESISTOR >	
R701	1-259-401-11	CARBON 75 5% 1/6W	
		< TRANSFORMER >	
T701	1-459-795-11	COIL (WITH CORE)	
**********			

Ref.No.	Part No.	Description	Remark
*	1-654-256-11	DISPLAY BOARD	
		**********	
*	4-969-510-01	HOLDER (FL)	
		< CAPACITOR >	
C801	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C802	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C803	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C804	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C805	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C806	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C807	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< FLUORESCENT INDICATOR >	
FLD801	1-517-357-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC801	8-759-324-36	IC LC7570E	
IC802	8-759-324-36	IC LC7570E	
IC803	8-759-324-36	IC LC7570E	
IC804	8-749-923-80	IC GP1U90XB	
		< TRANSISTOR >	
Q801	8-729-805-45	TRANSISTOR 2SC3395	
Q802	8-729-901-06	TRANSISTOR DTA144EK	
		< RESISTOR >	
R801	1-216-029-00	METAL CHIP 150 5% 1/10W	
R802	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R803	1-216-097-00	METAL CHIP 100K 5% 1/10W	
**********			
*	1-653-906-11	FL RELAY BOARD	
		**********	
		< CONNECTOR >	
CN291	1-568-794-11	SOCKET, CONNECTOR 12P	
* CN292	1-568-950-11	PIN, CONNECTOR 12P	
**********			
*	1-654-005-11	FLEX RELAY BOARD	
		**********	
		< CONNECTOR >	
CN191	1-580-473-11	SOCKET, CONNECTOR 26P	
**********			

Ref.No.	Part No.	Description	Remark
	1-653-918-11	FLEXIBLE BOARD	
		**********	
		< SWITCH >	
S21	1-571-958-11	SWITCH, PUSH (1 KEY) (LIMIT OUT)	
S22	1-571-958-11	SWITCH, PUSH (1 KEY) (LIMIT IN)	
**********			
*	1-654-233-11	FUSE BOARD	
		**********	
	1-533-233-11	HOLDER, FUSE	
		< CAPACITOR >	
⚠C991	1-162-599-12	CERAMIC 0.0047uF 20%	400V
⚠C992	1-162-599-12	CERAMIC 0.0047uF 20%	400V
⚠C993	1-161-744-00	CERAMIC 0.01uF	400V
		< CONNECTOR >	
* CN991	1-564-321-21	PIN, CONNECTOR 2P	
CN992	1-770-128-11	PIN, CONNECTOR 2P	
CN993	1-564-321-00	PIN, CONNECTOR 2P	
CN994	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
		< FUSE >	
⚠F991	1-532-279-00	FUSE, TIME-LAG (0.5A)	
⚠F992	1-532-279-00	FUSE, TIME-LAG (0.5A)	
		< TRANSFORMER >	
⚠T991	1-421-915-11	COIL, LINE FILTER	
**********			
*	1-654-236-11	KEY (L) BOARD	
		**********	
		< CONNECTOR >	
CN850	1-580-774-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN851	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P	
		< RESISTOR >	
R850	1-249-415-11	CARBON 680 5%	1/4W F
R851	1-249-417-11	CARBON 1K 5%	1/4W F
R852	1-249-419-11	CARBON 1.5K 5%	1/4W F
R853	1-249-421-11	CARBON 2.2K 5%	1/4W F
R854	1-249-423-11	CARBON 3.3K 5%	1/4W F
		< SWITCH >	
S850	1-554-303-21	SWITCH, TACTILE (▷▷|)	
S851	1-554-303-21	SWITCH, TACTILE (|◁◁)	
S852	1-554-303-21	SWITCH, TACTILE (▶▶)	
S853	1-554-303-21	SWITCH, TACTILE (◀◀)	
S854	1-554-303-21	SWITCH, TACTILE (TIME)	
S855	1-554-303-21	SWITCH, TACTILE (ERASE)	
S856	1-554-303-21	SWITCH, TACTILE (FILE)	
**********			
*	A-4673-285-A	KEY (R) BOARD, COMPLETE	
		**********	
*	3-362-478-01	HOLDER (T), LED	
		< CONNECTOR >	
CN871	1-580-775-11	PIN, CONNECTOR (PC BOARD) 8P	
		< DIODE >	
D871	8-719-303-02	DIODE SEL2510C-D	
D872	8-719-301-52	LED SEL2810A-C	
		< TRANSISTOR >	
Q871	8-729-900-45	TRANSISTOR DTC114EF	
Q872	8-729-900-45	TRANSISTOR DTC114EF	
		< RESISTOR >	
R871	1-249-415-11	CARBON 680 5%	1/4W F
R872	1-249-417-11	CARBON 1K 5%	1/4W F
R873	1-249-419-11	CARBON 1.5K 5%	1/4W F
R874	1-249-421-11	CARBON 2.2K 5%	1/4W F
R875	1-249-423-11	CARBON 3.3K 5%	1/4W F
R876	1-249-417-11	CARBON 1K 5%	1/4W F
R877	1-249-419-11	CARBON 1.5K 5%	1/4W F
R878	1-249-421-11	CARBON 2.2K 5%	1/4W F
R879	1-249-423-11	CARBON 3.3K 5%	1/4W F
R880	1-249-427-11	CARBON 6.8K 5%	1/4W F
R881	1-249-415-11	CARBON 680 5%	1/4W F
R882	1-249-423-11	CARBON 3.3K 5%	1/4W F
R883	1-249-427-11	CARBON 6.8K 5%	1/4W F
R884	1-249-431-11	CARBON 15K 5%	1/4W
R885	1-249-437-11	CARBON 47K 5%	1/4W
R886	1-249-415-11	CARBON 680 5%	1/4W F
R887	1-249-417-11	CARBON 1K 5%	1/4W F
R888	1-249-419-11	CARBON 1.5K 5%	1/4W F
R889	1-249-406-11	CARBON 120 5%	1/4W F
R890	1-249-410-11	CARBON 270 5%	1/4W F
R891	1-249-421-11	CARBON 2.2K 5%	1/4W F
		< SWITCH >	
S871	1-554-303-21	SWITCH, TACTILE (1)	
S872	1-554-303-21	SWITCH, TACTILE (2)	
S873	1-554-303-21	SWITCH, TACTILE (3)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

KEY (R) LINE OUT LOADING MOTOR LOADING SW OPT POWER

Ref. No.	Part No.	Description	Remark
S874	1-554-303-21	SWITCH, TACTILE (4)	
S875	1-554-303-21	SWITCH, TACTILE (5)	
S876	1-554-303-21	SWITCH, TACTILE (PLAY MODE)	
S877	1-554-303-21	SWITCH, TACTILE (6)	
S878	1-554-303-21	SWITCH, TACTILE (7)	
S879	1-554-303-21	SWITCH, TACTILE (8)	
S880	1-554-303-21	SWITCH, TACTILE (9)	
S881	1-554-303-21	SWITCH, TACTILE (10)	
S882	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S883	1-554-303-21	SWITCH, TACTILE (11)	
S884	1-554-303-21	SWITCH, TACTILE (12)	
S885	1-554-303-21	SWITCH, TACTILE (CHECK)	
S886	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S887	1-554-303-21	SWITCH, TACTILE (>12)	
S888	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S889	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)	
S890	1-554-303-21	SWITCH, TACTILE (▶)	
S891	1-554-303-21	SWITCH, TACTILE (▮▮)	
S892	1-554-303-21	SWITCH, TACTILE (■)	
**********			
*	1-654-231-11	LINE OUT BOARD	
		**********	
		< CONNECTOR >	
* CN471	1-564-519-11	PLUG, CONNECTOR 4P	
* CN472	1-564-519-11	PLUG, CONNECTOR 4P	
CN473	1-580-771-31	PIN, CONNECTOR (PC BOARD) 3P	
		< DIODE >	
D471	8-719-987-63	DIODE 1N4148M	
		< JACK >	
J471	1-568-101-11	JACK, PIN 4P (LINE OUT)	
		< RESISTOR >	
R470	1-249-637-11	CARBON 33 5% 1/2W	
R471	1-247-700-11	CARBON 100 5% 1/4W F	
R570	1-249-637-11	CARBON 33 5% 1/2W	
R571	1-247-700-11	CARBON 100 5% 1/4W F	
		< RELAY >	
RY471	1-515-804-11	RELAY	
**********			
*	1-653-907-11	LOADING MOTOR BOARD	
		**********	
		< CONNECTOR >	
CN272	1-506-469-11	PIN, CONNECTOR 4P	
**********			
*	1-653-905-11	LOADING SW BOARD	
		**********	
		< CONNECTOR >	
* CN281	1-568-942-11	PIN, CONNECTOR 4P	
		< RESISTOR >	
R281	1-249-415-11	CARBON 680 5% 1/4W F	
		< SWITCH >	
S281	1-692-193-11	SWITCH, PUSH (1 KEY) (IN SW)	
S282	1-692-193-11	SWITCH, PUSH (1 KEY) (OUT SW)	
S283	1-692-193-11	SWITCH, PUSH (1 KEY) (LD SW)	
**********			
*	1-654-234-11	OPT BOARD	
		*********	
		< CAPACITOR >	
C701	1-126-059-11	ELECT 10uF 20% 50V	
		< CONNECTOR >	
CN701	1-691-459-11	PIN, CONNECTOR (PC BOARD) 3P	
CN702	1-691-459-21	PIN, CONNECTOR (PC BOARD) 3P	
		< IC >	
IC701	8-749-921-12	IC GP1F32T	
**********			
*	A-4673-529-A	POWER BOARD, COMPLETE	
		**********	
	2-259-121-01	SCREW, TR	
*	4-363-146-00	HEAT SINK, V.OUT	
*	4-941-237-01	HEAT SINK	
		< CAPACITOR >	
C901	1-136-177-00	FILM 1uF 5% 50V	
C902	1-107-611-11	MICA 100PF 5% 500V	
C921	1-110-504-11	ELECT 6800uF 20% 35V	
C922	1-136-165-00	FILM 0.1uF 5% 50V	
C923	1-124-910-11	ELECT 47uF 20% 50V	

Ref.No.	Part No.	Description				Remark
C924	1-106-343-00	MYLAR	1000PF	5%	200V	
C925	1-107-611-11	MICA	100PF	5%	500V	
C926	1-124-922-11	ELECT	1000uF	20%	63V	
C931	1-110-504-11	ELECT	6800uF	20%	35V	
C932	1-136-165-00	FILM	0.1uF	5%	50V	
C933	1-124-910-11	ELECT	47uF	20%	50V	
C934	1-106-343-00	MYLAR	1000PF	5%	200V	
C935	1-107-611-11	MICA	100PF	5%	500V	
C936	1-124-922-11	ELECT	1000uF	20%	63V	
C951	1-126-017-11	ELECT	6800uF	20%	16V	
C952	1-126-027-11	ELECT	1000uF	20%	25V	
C953	1-126-027-11	ELECT	1000uF	20%	25V	
C954	1-124-556-11	ELECT	2200uF	20%	16V	
C955	1-110-335-11	MYLAR	100PF	5%	50V	
C956	1-110-335-11	MYLAR	100PF	5%	50V	
C957	1-110-335-11	MYLAR	100PF	5%	50V	
C961	1-126-015-11	ELECT	3300uF	20%	16V	
C963	1-126-027-11	ELECT	1000uF	20%	25V	
C970	1-110-335-11	MYLAR	100PF	5%	50V	
C971	1-126-052-11	ELECT	100uF	20%	35V	
C972	1-126-059-11	ELECT	10uF	20%	50V	
C973	1-126-023-11	ELECT	100uF	20%	25V	
C974	1-126-023-11	ELECT	100uF	20%	25V	
C975	1-110-335-11	MYLAR	100PF	5%	50V	
C976	1-110-335-11	MYLAR	100PF	5%	50V	
C977	1-110-335-11	MYLAR	100PF	5%	50V	
C978	1-162-282-31	CERAMIC	100PF	10%	50V	
C979	1-164-159-11	CERAMIC	0.1uF		50V	
C980	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN921	1-564-507-11	PLUG, CONNECTOR 4P				
* CN922	1-564-507-11	PLUG, CONNECTOR 4P				
* CN923	1-564-508-11	PLUG, CONNECTOR 5P				
CN951	1-564-511-11	PLUG, CONNECTOR 8P				
CN952	1-564-511-11	PLUG, CONNECTOR 8P				
		< DIODE >				
D921	8-719-210-29	DIODE	F10P10Q			
D922	8-719-210-29	DIODE	F10P10Q			
D923	8-719-114-49	DIODE	RD7.5JS-B2			
D924	8-719-115-98	DIODE	RD10JS-T2B1			
D931	8-719-210-29	DIODE	F10P10Q			
D932	8-719-210-29	DIODE	F10P10Q			
D933	8-719-114-49	DIODE	RD7.5JS-B2			
D934	8-719-975-85	DIODE	ERB83-004			
D951	8-719-047-31	DIODE	RBA-402L			
D952	8-719-210-21	DIODE	11EQS04			
D971	8-719-200-02	DIODE	10E2			
D972	8-719-200-02	DIODE	10E2			
D973	8-719-200-02	DIODE	10E2			
D974	8-719-200-02	DIODE	10E2			
D975	8-719-113-38	DIODE	RD18ES-T2B1			
D976	8-719-111-61	DIODE	RD3.9ES-T2B1			
		< GROUND PLATE >				
* ET920	4-870-539-00	PLATE, GROUND				
		< IC >				
IC921	8-759-602-01	IC	M5220P			
IC951	8-759-604-86	IC	M5F7807L			
IC952	8-759-231-53	IC	TA7805S			
IC953	8-759-604-90	IC	M5F7907L			
		< IC LINK >				
⚠PS921	1-532-685-00	LINK, IC 0.8A				
⚠PS931	1-532-685-00	LINK, IC 0.8A				
		< TRANSISTOR >				
Q921	8-729-203-05	TRANSISTOR	2SK30A-GR3			
Q922	8-729-107-53	TRANSISTOR	2SC2275A-P			
Q931	8-729-203-05	TRANSISTOR	2SK30A-GR3			
Q932	8-729-141-10	TRANSISTOR	2SA985A-QP			
Q971	8-729-140-97	TRANSISTOR	2SB734-34			
		< RESISTOR >				
⚠R901	1-212-976-00	FUSIBLE	56	5%	1/2W	
⚠R902	1-212-994-00	FUSIBLE	330	5%	1/2W	
R921	1-249-520-11	CARBON	47	5%	1/4W	
R922	1-247-713-11	CARBON	1K	5%	1/4W F	
R923	1-247-713-11	CARBON	1K	5%	1/4W F	
R924	1-247-717-11	CARBON	2.2K	5%	1/4W F	
R925	1-247-714-11	CARBON	1.2K	5%	1/4W F	
R926	1-247-700-11	CARBON	100	5%	1/4W F	
R931	1-249-520-11	CARBON	47	5%	1/4W	
R932	1-247-713-11	CARBON	1K	5%	1/4W F	
R933	1-247-713-11	CARBON	1K	5%	1/4W F	
R934	1-247-717-11	CARBON	2.2K	5%	1/4W F	
R935	1-247-714-11	CARBON	1.2K	5%	1/4W F	
R936	1-247-700-11	CARBON	100	5%	1/4W F	
R971	1-259-444-11	CARBON	4.7K	5%	1/6W	
R972	1-259-460-11	CARBON	22K	5%	1/6W	
R973	1-259-440-11	CARBON	3.3K	5%	1/6W	
		< THERMISTOR >				
TH903	1-806-882-11	THERMISTOR, POSITIVE				
TH904	1-808-065-11	THERMISTOR, POSITIVE				

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Replace only with part number specified.

SERVO

Ref.No.	Part No.	Description			Remark
*	A-4673-224-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C93	1-124-995-11	ELECT	220uF	20%	10V
C94	1-124-995-11	ELECT	220uF	20%	10V
C95	1-124-995-11	ELECT	220uF	20%	10V
C96	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C97	1-126-162-11	ELECT	3.3uF	20%	50V
C101	1-126-177-11	ELECT	100uF	20%	10V
C102	1-126-177-11	ELECT	100uF	20%	10V
C103	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C104	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C105	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C106	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C107	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C108	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C109	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C110	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-164-346-11	CERAMIC CHIP	1uF		16V
C131	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C132	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C135	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C136	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C137	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C138	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C139	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C140	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C141	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C142	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C143	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C144	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C145	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C161	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C162	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C163	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C174	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C176	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C177	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C178	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C201	1-125-622-11	CAP, DOUBLE LAYERS			0.10F
C202	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C203	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C204	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C251	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C252	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C261	1-126-177-11	ELECT	100uF	20%	10V
		< CONNECTOR >			
* CN91	1-573-278-11	PIN, CONNECTOR 8P			
CN101	1-568-795-11	SOCKET, CONNECTOR 12P			
CN102	1-580-473-11	SOCKET, CONNECTOR 26P			
CN103	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P			
CN104	1-580-774-11	PIN, CONNECTOR (PC BOARD) 6P			
CN105	1-580-771-11	PIN, CONNECTOR (PC BOARD) 3P			
CN201	1-580-774-11	PIN, CONNECTOR (PC BOARD) 6P			
CN202	1-580-775-11	PIN, CONNECTOR (PC BOARD) 8P			
CN203	1-580-770-11	PIN, CONNECTOR (PC BOARD) 2P			
CN204	1-580-770-11	PIN, CONNECTOR (PC BOARD) 2P			
CN251	1-580-774-11	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D201	8-719-914-44	DIODE	DAP202K		
D202	8-719-976-96	DIODE	DTZ4.7C		
D261	8-719-938-07	LED	GL480		
		< IC >			
IC91	8-759-636-16	IC	M51957AL		
IC101	8-752-361-94	IC	CXD2515Q		
IC102	8-759-071-79	IC	BA6297AFP		
IC103	8-759-100-96	IC	uPC4558G2		
IC104	8-759-071-79	IC	BA6297AFP		
IC105	8-759-071-79	IC	BA6297AFP		
IC201	8-752-864-35	IC	CXP84124-025Q		
IC202	8-759-289-95	IC	LH5160TG		
IC203	8-759-822-09	IC	LB1641		
IC261	8-749-010-61	IC	IS471F		
		< TRANSISTOR >			
Q101	8-729-901-06	TRANSISTOR	DTA144EK		
Q102	8-729-901-01	TRANSISTOR	DTC144EK		
Q103	8-729-901-06	TRANSISTOR	DTA144EK		
Q104	8-729-901-01	TRANSISTOR	DTC144EK		
Q201	8-729-901-04	TRANSISTOR	DTA114EK		
Q202	8-729-900-53	TRANSISTOR	DTC114EK		
		< RESISTOR >			
R91	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R92	1-216-077-00	METAL CHIP	15K	5%	1/10W
R93	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R101	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R102	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R103	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R104	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R105	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R106	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R107	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R108	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R109	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R110	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R111	1-216-041-00	METAL CHIP	470	5% 1/10W	
R112	1-216-041-00	METAL CHIP	470	5% 1/10W	
R113	1-216-041-00	METAL CHIP	470	5% 1/10W	
R114	1-216-037-00	METAL CHIP	330	5% 1/10W	
R115	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R116	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R117	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R118	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R119	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R131	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R132	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R133	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R134	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R135	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R136	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R137	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R138	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R139	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R140	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R141	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R142	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R143	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R144	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R145	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R146	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R147	1-216-308-00	METAL CHIP	4.7	5% 1/10W	
R148	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R149	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R150	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R151	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R152	1-216-001-00	METAL CHIP	10	5% 1/10W	
R153	1-216-001-00	METAL CHIP	10	5% 1/10W	
R154	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R155	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R161	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R162	1-216-091-00	METAL CHIP	56K	5% 1/10W	
R163	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R164	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R165	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R166	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R167	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R168	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R171	1-216-001-00	METAL CHIP	10	5% 1/10W	
R172	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R173	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R174	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R175	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R176	1-216-308-00	METAL CHIP	4.7	5% 1/10W	
R179	1-216-001-00	METAL CHIP	10	5% 1/10W	
R180	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R181	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R182	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R183	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R184	1-216-308-00	METAL CHIP	4.7	5% 1/10W	
R201	1-216-013-00	METAL CHIP	33	5% 1/10W	
R202	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R203	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R204	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R205	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R206	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R207	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R208	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R209	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R210	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R212	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R213	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R214	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R215	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R261	1-216-021-00	METAL CHIP	68	5% 1/10W	

< VIBRATOR >

X201 1-577-377-11 VIBRATOR, CERAMIC (10MHz)

****

* 1-654-238-11 SW BOARD
****

< CONNECTOR >

* CN995 1-696-874-21 LEAD (WITH CONNECTOR)

< SWITCH >

⚠S991 1-572-267-51 SWITCH, PUSH (AC POWER)(1 KEY)(POWER)

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VOLUME

Ref. No.	Part No.	Description			Remark
*	1-654-237-11	VOLUME BOARD			
		**********			
*	4-962-201-01	PLATE (HP), GROUND			
		< CAPACITOR >			
C350	1-164-159-11	CERAMIC	0.1uF		50V
C351	1-164-159-11	CERAMIC	0.1uF		50V
C461	1-162-290-31	CERAMIC	470PF	10%	50V
C475	1-164-159-11	CERAMIC	0.1uF		50V
C561	1-162-290-31	CERAMIC	470PF	10%	50V
		< CONNECTOR >			
CN351	1-564-523-11	PLUG, CONNECTOR 8P			
* CN352	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN461	1-573-262-11	PIN, CONNECTOR 3P			
		< IC >			
IC350	8-759-962-08	IC BA6208			
		< JACK >			
J461	1-750-162-61	JACK (LARGE TYPE) (PHONES) (BLACK)			
J461	1-766-850-11	JACK (LARGE TYPE) (PHONES) (GOLD)			
		< COIL >			
L461	1-412-473-21	INDUCTOR	0uH		
L561	1-412-473-21	INDUCTOR	0uH		
		< VARIABLE RESISTOR >			
RV350	1-223-747-11	RES, VAR, CARBON 10K/10K (LINE OUT, PHONE LEVEL)			
**********					
		MISCELLANEOUS			
		**********			
⚠109	1-558-568-21	CORD, POWER			
119	1-533-233-11	HOLDER, FUSE			
705	1-769-110-11	WIRE (FLAT TYPE) (26 CORE)			
709	1-769-109-11	WIRE (FLAT TYPE) (12 CORE)			
⚠805	8-848-368-11	OPTICAL PICK-UP BLOCK KSS-273A/J-N			
⚠F991	1-532-279-00	FUSE, TIME-LAG (0.5A 250V)			
⚠F992	1-532-279-00	FUSE, TIME-LAG (0.5A 250V)			
M21	X-4945-920-1	MOTOR ASSY (SLED)			
M271	X-4945-565-1	MOTOR ASSY (LOADING)			
⚠T901	1-427-816-11	TRANSFORMER, POWER			
⚠T902	1-427-817-11	TRANSFORMER, POWER			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-467-889-11	REMOTE COMMANDER (RM-D921)	
	1-590-925-31	CORD, CONNECTION (AUDIO 100cm)	
	3-707-584-21	COVER, BATTERY (for RM-D921)	
	3-759-341-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, SWEDISH) (AEP)	
	3-759-341-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE)	
*	4-971-334-01	CUSHION	
*	4-972-153-01	INDIVIDUAL CARTON	
	A-4660-688-A	STABILIZER ASSY	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT (SILVER).. (GOLD)	
#1	7-685-246-19	SCREW +KTP 3X8 TYPE2 NON-SLIT (BLACK).. (BLACK)	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-682-560-04	SCREW +BVTT 4X6 (S)	
#4	7-682-549-09	SCREW +BVTT 3X10 (S)	
#5	7-682-564-09	SCREW +B 4X14	
#6	7-682-548-09	SCREW +BVTT 3X8 (S)	
#7	7-685-134-19	SCREW +PTPWH 2.6X8 (TYPE2)	
#8	7-621-772-30	SCREW +B 2X6	
#9	7-682-903-01	SCREW +PWH 3X5	
#10	7-682-902-11	SCREW +PWH 2.6X5	
#11	7-621-775-50	SCREW +B 2.6X10	
#12	7-628-253-00	SCREW +PS 2X4	
#13	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT	
#14	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#15	7-685-646-79	SCREW, TAPPING	
#16	7-682-548-04	SCREW +BVTT 3X8 (S)	
#17	7-627-852-07	SCREW, PRECISION +P 1.7X2.5	
#19	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#20	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#21	7-627-852-58	SCREW, PRECISION +P 1.7X5 TYPE3	

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Consumer A&V Products Company
Home A&V Products Div.

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CDP-XA5ES

SONY
SERVICE MANUAL

AEP Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	Ref.No.	Part No.	Description	Part No.	Description
40	* 701	A-4673-224-A	SERVO BOARD, COMPLETE	* A-4673-678-A ☛	SERVO BOARD, COMPLETE
50	*	A-4673-224-A	SERVO BOARD, COMPLETE	* A-4673-678-A ☛	SERVO BOARD, COMPLETE
	CN203	1-580-770-11	PIN, CONNECTOR (PC BOARD) 2P	——— deleted ——— ☛	
	CN204	1-580-770-11	PIN, CONNECTOR (PC BOARD) 2P	——— deleted ——— ☛	

(ECN-CD500577)

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